

# Manufacturers Record

## Exponent of America



\$6.50 per Year.  
Single Copy, 20 Cents.

Baltimore, Md.  
AUGUST 3, 1922

### What the Strikers Are Doing.

Of the miners and railway men who are on strike and seeking to prevent others from work, it can be truthfully said:

**THEY ARE** defying the Federal Government and scouting the President's authority.

**THEY ARE** dangerously close to warfare if they are not indeed actually engaged in war against the Government.

**THEY ARE** doing their utmost to freeze millions of people this winter, caring not how many women and children and feeble people die from lack of fuel.

**THEY ARE** working with equal determination to starve the country into submission.

**THEY WILL** cause many millions of dollars' worth of food to rot on the ground for lack of transportation, regardless of the loss to the farmers who have produced the food and to the tens of millions who will suffer for lack of it and to the thousands who will die from lack of nourishment.

**THEY ARE** seeking to stop industrial plants, for lack of coal and transportation, which would throw millions out of employment and thus add enormously to national suffering, poverty and misery.

**THEY HAVE** thrown to the winds and trampled in the mud every semblance of patriotism, every instinct of humanity, every desire to serve others and save them from freezing and starving.

**THEY STAND** before the President of the United States and before the American people with uplifted bludgeon and say, "Yield to our demands or we will wreck business; we will throw millions out of employment; we will uphold murder; we will beat unto death every man who presumes to work contrary to our dictates; we will tar and feather; we will commit every other imaginable crime which devilish ingenuity can suggest against non-union men; we will obey neither the laws of God or man."

"What care we how many are murdered, what care we how many freeze or how many die from lack of nourishment: We are supreme! Our will shall be the nation's law and on the dead body of national sovereignty we will ride into supreme power."

**BUT—**

Thank God! there are many labor union men who are not of this class. Their sense of duty and right; their willingness to sacrifice in order to serve others; their love of God and of humanity will help to save the radical element from making possible all of the evils predicted, which this radical element is seeking to bring about.

August 3, 1922.



**T**HE extraordinary durability of Copperoid Steel Sheets has been demonstrated so thoroughly that users of sheet metal under conditions where it is exposed to atmospheric corrosion should insist most positively on YOUNGSTOWN COPPEROID.

It is important that the sheets have stencilled on each bundle the above trademark, since there are already on the market numerous other brands of sheets with names indicating that they are made of a copper alloy.

COPPEROID STEEL is made only by this company. It is a definite and distinct product, essentially different from any other mixture of copper and steel. Be sure to get the Genuine COPPEROID if you want sheets that will last several times as long as ordinary steel, so-called "Pure Iron" made in open-hearth Steel Furnaces, or any other metal sold at even approximately the same price.

## THE YOUNGSTOWN SHEET & TUBE COMPANY YOUNGSTOWN, OHIO

### DISTRICT SALES OFFICES:

BOSTON—120 Franklin St.  
NEW YORK—30 Church St.  
PHILADELPHIA—Pennsylvania Building.  
ATLANTA—Healey Bldg.  
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CLEVELAND—Leader-News Bldg.  
DETROIT—Dime Savings Bank Building.

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SAN FRANCISCO—604 Mission St.  
SEATTLE—Central Bldg.



EXPORT SALES AGENT—Consolidated Steel Corporation,  
25 Broadway, New York City.

Aug

# No Job Too Small—None Too Large For Truscon Steel Sash



In the mammoth southern Pacific warehouse at San Francisco, Cal., a plain industrial building, or in the beautiful Avenue State Bank, Oak Park, Illinois, Truscon Steel Windows are practical and economical. There are types and sizes of Truscon Steel Windows that harmonize with almost every architectural design and conform to practically all types of construction.

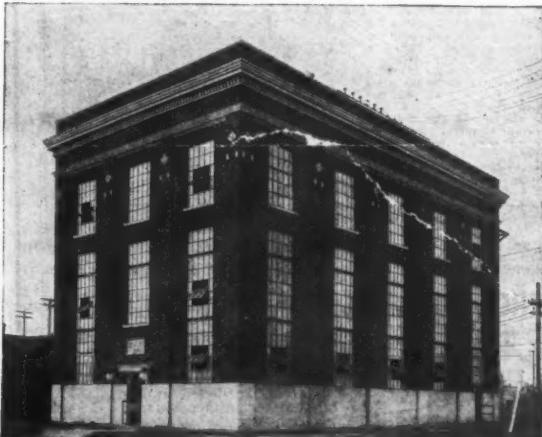
Not only is the original cost of Truscon Steel Windows low, but time and labor are saved in installation. Truscon Steel Windows are anchored directly to the masonry work. There is no framing as with wood sash. They afford 40 to 60% more daylight. They are indestructible, permanent and fire-resisting.

Truscon Steel Windows can be delivered to you in the shortest possible time because the most popular types and sizes are stocked in our warehouses in principal cities and by Truscon dealers everywhere. This is an economical service for the contractor or architect constructing small buildings where only a comparatively few sash are required.

*You can buy one sash or a thousand—and they cost less than wood*

## Truscon Steel Company Youngstown, Ohio

*Warehouses and Sales Offices in Principal Cities*



DALLAS LIGHT & POWER COMPANY, Sub Station,  
Dallas, Texas.  
Archts. and Contrs.—Texas Construction Company.



AVENUE STATE BANK, Oak Park, Illinois.  
Archts.—Puckey & Jenkins. Contr.—S. N. Neilson.

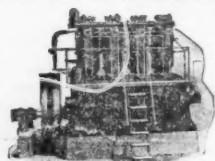


WAREHOUSE SOUTHERN PACIFIC RAILROAD, San Francisco, Calif.  
Archts.—Bliss & Faville. Contrs. Dinwiddie Construction Company.

# THE FOOS

## ARE YOU PAYING FOR A FOOS?

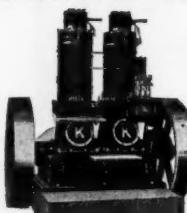
Many people are paying for a FOOS although they do not get a FOOS. They buy instead a cheaply made engine and pay more than the difference between repair bills, etc., fuel and upkeep costs, etc. We frequently receive the first important repair order on FOOS engines in operation almost 20 years. There is 35 years experience behind every FOOS.



All fuels 6 to 325 HP

THE FOOS GAS ENGINE CO., SPRINGFIELD, OHIO

## IMPROVED ANDERSON OIL ENGINES



Maintain their mechanical efficiency for years, all working parts enclosed and easily accessible. The crank shafts are large and of open hearth steel, hardened and ground to micrometer dimensions.

Anderson Oil Engines will rotate in either direction, and will drive from either end of the crank shaft. They will solve your power problem, giving economical and reliable service.

Write for Bulletin No. 26 and see what opinion users have of Anderson Oil Engines.

Quick shipments on all sizes from 15 to 225 H.P.

Address Dept. M.

**ANDERSON FOUNDRY & MACH. CO.**  
ANDERSON, IND., U. S. A.

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Dry Pans, (3 sizes).  
Wet Pans, (3 sizes).  
Sewer Pipe Presses, (4 sizes).  
Gravity Elevators.  
Sewer Pipe Dies.  
Feeders.  
Conveyors.  
Potters Machinery.  
Oat Cutters and Hullers.  
Rubber Core and Mold Work.

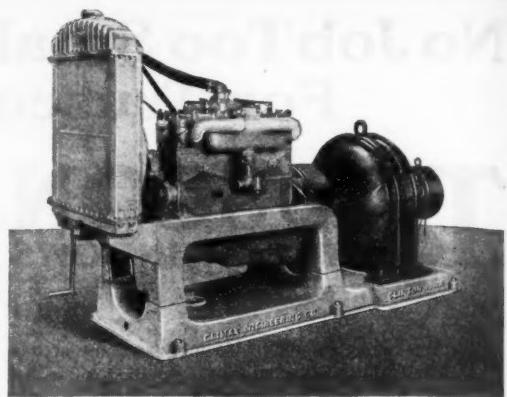
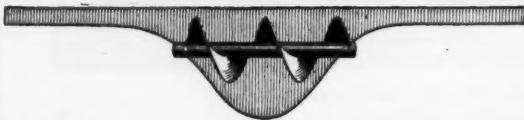
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## HELICOID CONVEYOR

CONTINUOUS flights (without laps or rivets), and heavier flights on larger pipe, make Caldwell Helicoid Conveyor by far the best on the market. It is the recognized standard conveyor of this type.

H. W. CALDWELL & SON CO., LINK-BELT COMPANY, OWNER  
Dallas, Texas, 709 Main St.—Chicago, 17th St. and Western Ave.—New York, Woolworth Bldg.



# Pay Less For Your Power

By Cutting Down The Peak Load of Your Purchased Power. The Saving in Rate Soon Pays for This Outfit. Gives You Protection in Every Emergency By Providing Your Own Current for Lights, Motors, Arc Welding and Cutting.

# CLIMAX

The "Trustworthy" Power Unit

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**Climax Engineering Company**  
19 W. 18th Ave., Clinton, Iowa

Manufacturers of Internal Combustion Engines for Automotive and Industrial Power Purposes.

**19 Years of  
Continuous Service  
and still doing  
their duty**

19 years of continuous service and still doing their duty. The boilers referred to in this letter are two 72" by 18' built for 125 lb. working pressure, and were shipped by us in June 1903.

**ERIE CITY IRON WORKS  
ERIE, PA.**

We also build Lentz engines and pulverized Coal Apparatus.

**BOTTOM CREEK COAL & COKE CO.**

Bottom Creek Mine

**POCAHONTAS COAL**

Vivian (McDowell County), W. Va.

July 3rd, 1922.

Erie City Iron Works,

Erie, Pa.

Dear Sirs:—

I wish to thank you for your letter of July 1st and blueprint of boiler installation.

It may be of interest to you to know that these boilers have been in continuous service since installed and have given very good satisfaction. Up to this time we have had not even a leaky tube on either boiler. They have been inspected regularly by the Hartford Boiler Insurance Co., and we have always had a very satisfactory report from their inspector.

Yours truly,

**BOTTOM CREEK COAL & COKE COMPANY,**

(Signed) G. S. Patterson,

Secy. & Treas.

GSP-cgh

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A necessity for turbine protection, engine cylinder economy and utilization of superheat for all its benefits.  
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**Marine "VITA" Glue**

Sets and stays in seams. Has tenacity and vitality

For samples and prices write to

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Successors to VALK & MURDOCH CO.

**MARINE AND STATIONARY BOILERS**

Repairs to Steel and Wooden Vessels

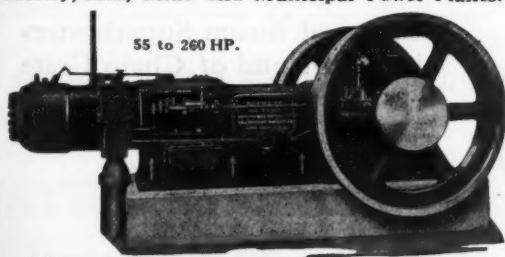
8,000-ton Dry Dock - 1,500 and 600-ton Marine Railways

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**BUCKEYE OIL ENGINES**

for Factory, Mill, Mine and Municipal Power Plants.

55 to 260 HP.



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**Yolande Coal & Coke Company**

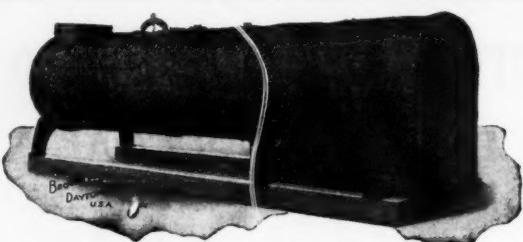
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**WASHED and SIZED BLACKSMITH COAL**

Mines and Ovens at Yolande, Ala.

General Office: Brown-Marx Building

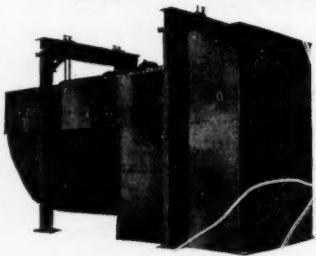
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Locomotive Type Portable Boiler

Send for B-2

## BOILERS WITH OR WITHOUT STEEL CASINGS

THE HOUSTON, STANWOOD & GAMBLE Co.  
CINCINNATI

WE ALSO

BUILD

### ENGINES AND HEATERS

## ENGINES                    BOILERS TANKS    TOWERS    SMOKE STACKS

If you are in the market for the above, get our prices. We are Southern Manufacturers, and not only manufacture, but guarantee our products. We want you to take advantage of our 50 years' experience.

*Write us for further information  
and become a satisfied customer.*

SCHOFIELD'S IRON WORKS  
Dept. H                    MACON, GA.

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Boiler Codes are written to protect life and property and to obtain a high class boiler for the user. The code alone can not accomplish this but can only do so when the boiler is built by a reliable concern who is properly equipped as to machinery, experience and organization.

The Brownell Company, backed by its 67 years of successful design and construction of boilers and engines, is so equipped and the boilers built by them meet the full spirit as well as the letter of the specifications.

You are safe in buying a Brownell boiler built according to a Code or our own specifications.

The Brownell Company

Dayton, Ohio, U. S. A.

Established 1855

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Also EXPERTS in  
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Makers of Steam Superheaters  
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SEATTLE, L. C. Smith Building  
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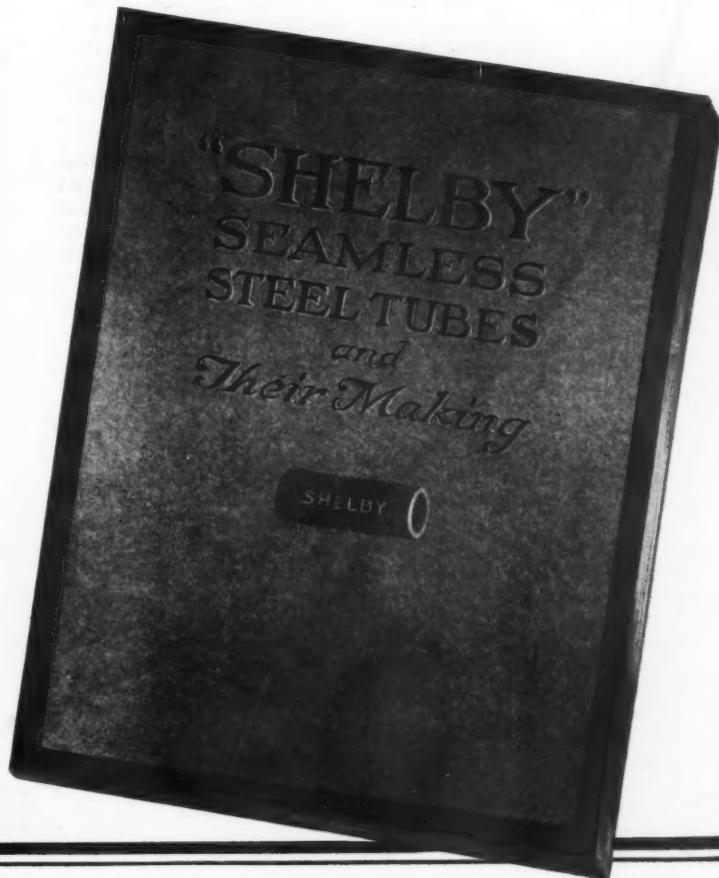
# -for your Technical Library

THIS NEW EDITION OF : 'SHELBY' SEAMLESS STEEL TUBES AND THEIR MAKING" gives a detailed description of manufacture, and contains technical information of value to men engaged in designing, engineering, and other mechanical vocations.

¶ The technical information is principally in the shape of tables, etc., giving the physical properties, anneals, forming possibilities, appearance, etc., of the tubing in various kinds of steel.

¶ The balance of the text is so written as to stimulate the mind in the practical possibilities of the material; by showing what is now regularly being done with seamless tubing in various lines of industry; by acquainting the reader with the range of sizes, shapes, wall-thicknesses, steels, and anneals in which it is manufactured; by showing the high standards of accuracy represented in the various dimensions, and the practically unvarying chemical and physical uniformity of the material.

¶ This is a 72-page booklet in the convenient 8½ x 11 inch size, and is completely illustrated with photographs and line drawings.



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*A copy of this booklet may be obtained without charge from any District Sales Office of National Tube Company*

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# The Jenkins Diamond and its Significance

THE Jenkins "Diamond Mark" on a valve is positive assurance that the valve was manufactured by Jenkins Bros., who for over 57 years have produced valves that measure up to the very highest standard of workmanship and materials.

The Jenkins "Diamond Mark" signifies an assured valve service. Jenkins design provides a heavier, stronger valve. The "analyses proved" metal is uniformly cast, and castings are accurately machined to provide unity of parts. Each valve must "prove" itself in rigid tests and leaves the factory fully guaranteed—a valve that is safe and dependable in severe as well as average service.

The Jenkins "Diamond Mark" is the means of identifying genuine Jenkins Valves. Because Jenkins Valves are the original and true stock they have a distinct superiority, for an originator excels in producing that which he has created.

Jenkins "Diamond Marked" Valves have earned a nation wide reputation and prestige. This reputation throws an additional obligation upon a manufacturer, for a standard once established must be constantly and assuredly maintained. Jenkins Bros. are ever mindful of this obligation, and shall continue to produce valves that will maintain and increase the high repute of the Jenkins Bros. name.

Genuine Jenkins "Diamond Marked" Valves are sold AT SUPPLY HOUSES EVERYWHERE. Install "Jenkins" throughout your plant, and provide yourself with dependable, permanent, and economical service.

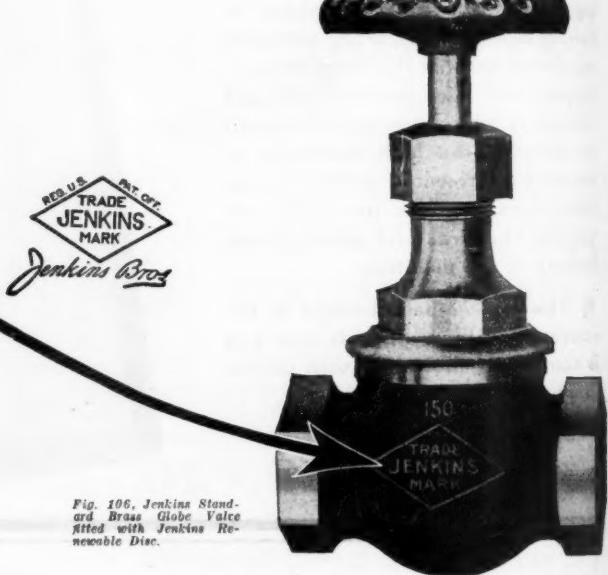
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New York  
London

Boston Philadelphia

Chicago  
Montreal

FACTORIES: Bridgeport, Conn.;  
Elizabeth, N. J.; Montreal, Canada.



**Jenkins Valves**

SINCE 1864

2507-J

August 3, 1922.

## MANUFACTURERS RECORD.

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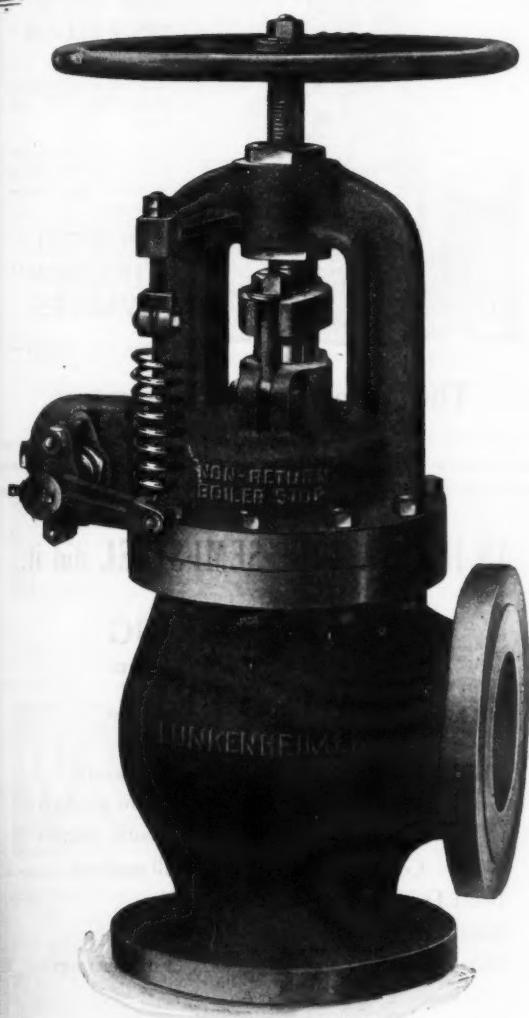
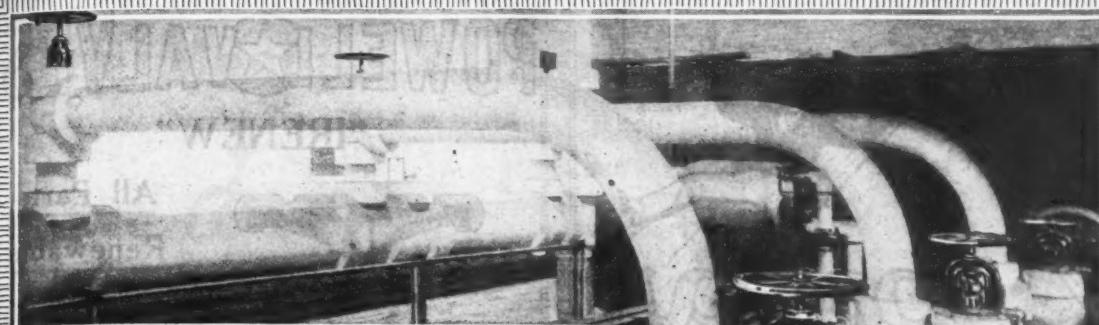
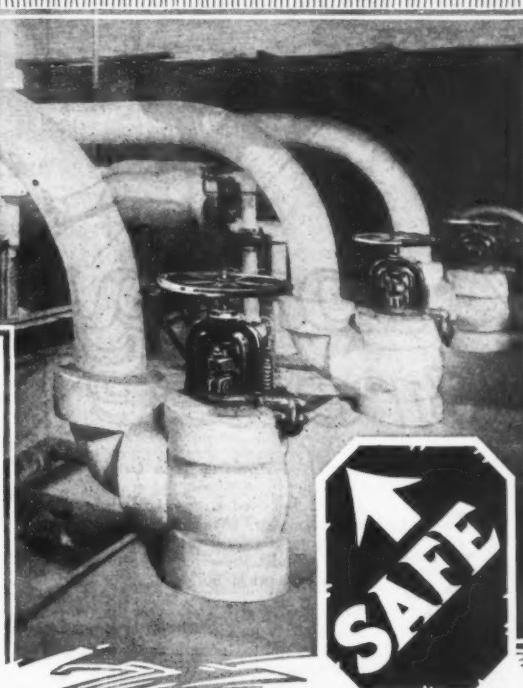


Fig. 700

*"Essential for the safe operation of boilers connected in battery"*

10-19-62



## LUNKENHEIMER *Safety Non-Return Valves*

are safety devices of established merit, providing positive protection to the operatives as well as the plant itself, against the dangers incident to an internal accident to one of the boilers of a battery.

A sudden drop in pressure within the boiler will cause the Lunkenheimer Non-Return Safety Boiler Stop Valve to close instantly and it will not reopen until the pressure within the boiler is raised to that in the header as these valves cannot be opened by hand. They likewise safeguard the lives of workers who enter a dead boiler, should the regular stop valve fail or be opened through carelessness.

Lunkenheimer construction provides extreme factors of safety,—vital to the severe service these valves perform; minute adjustment to meet individual operating conditions and durability far beyond the average.

Iron Body Bronze Mounted and Cast Steel Monel Mounted for all pressure and temperature conditions.

*"America's Best since 1862"*

**THE LUNKENHEIMER CO.**  
—“QUALITY”—

LARGEST MANUFACTURERS OF  
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IN THE WORLD

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CHICAGO      LONDON

Export Dept. 129-135 Lafayette St., New York

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## JENKINS BROS.

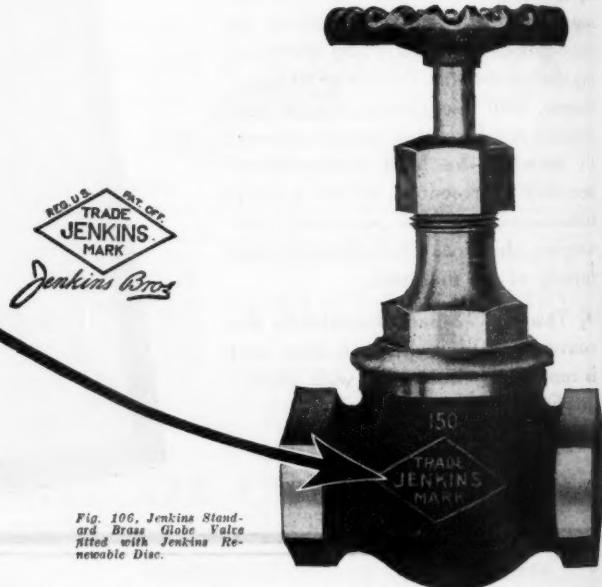
New York  
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FACTORIES: Bridgeport, Conn.;  
Elizabeth, N. J.; Montreal, Canada.



**Jenkins Valves**

SINCE 1864

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August 3, 1922.

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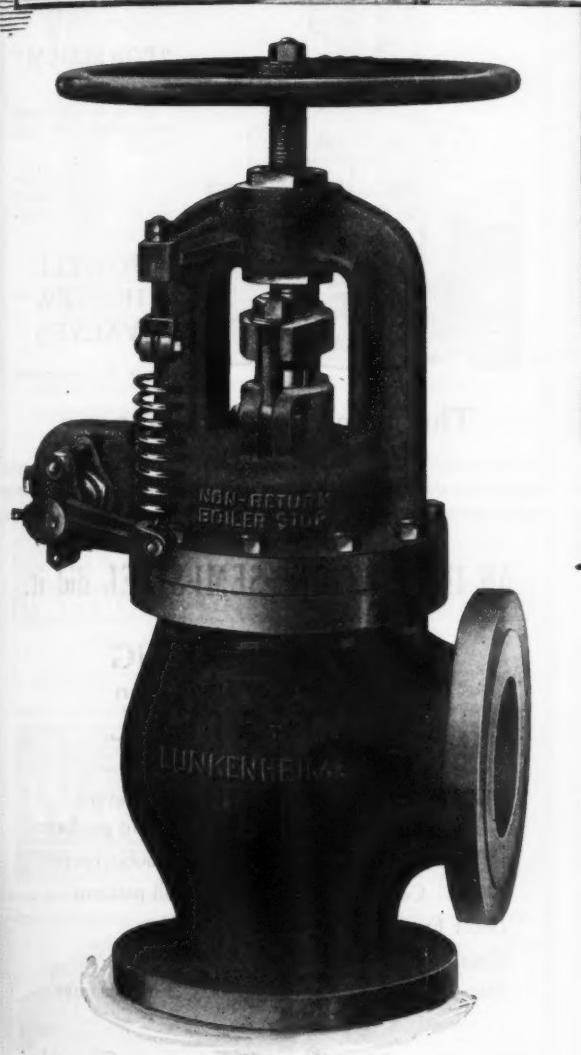
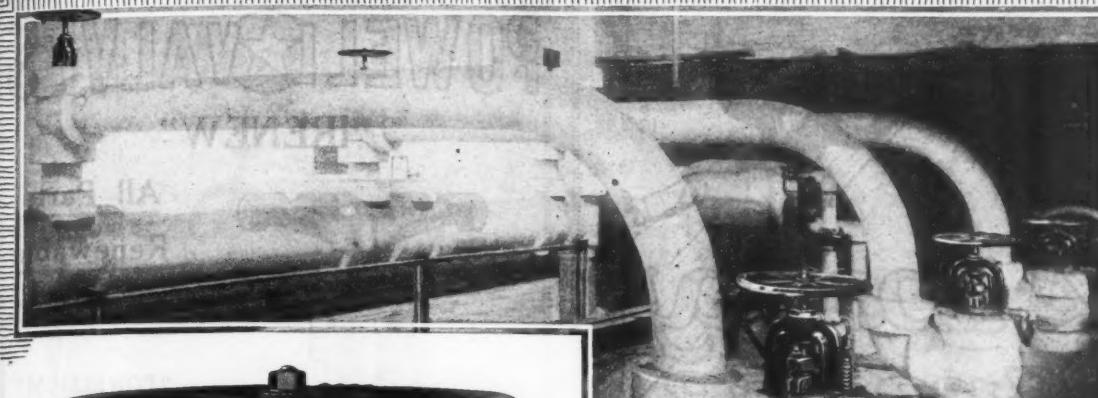


Fig. 700

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10-19-62



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Iron Body Bronze Mounted and Cast Steel Monel Mounted for all pressure and temperature conditions.

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A MARK  
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Since 1868 —  
for fair dealing,  
a quality product  
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It can be used in any grease cup or bearing cap. Made in consistencies adapting it to use under any temperature conditions—in a refrigerating room or over a boiler.

Your dealer will show you the temperature chart in the Albany Folder—use it as a guide in selecting the proper consistency.

**Dealers stock Albany Grease because they know it's good—ask yours.**

**Adam Cook's Sons**

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The wisest step an engineer can take in his fight on scale is to get a copy of the booklet, "Graphite for the Boiler". It gives the theory and practice of Dixon's Boiler Graphite and the actual results obtained. Its many advantages are made clear.

It is shown that by feeding Dixon's Boiler Graphite to the boilers old scale is broken down and new scale is prevented from adhering to the heating surface.

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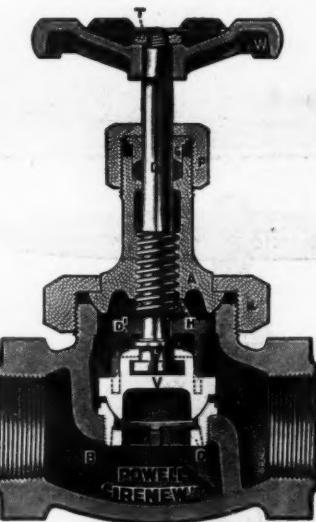
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All Parts

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Acid-proof disc and seat ring of non-corrosive white.

"POWELLUM" nickel.

Iron body brass mounted or all iron.

Avoid disappointment in valve service by specifying.

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**WE ARE MAKING  
50% Steel—50% Pig Iron  
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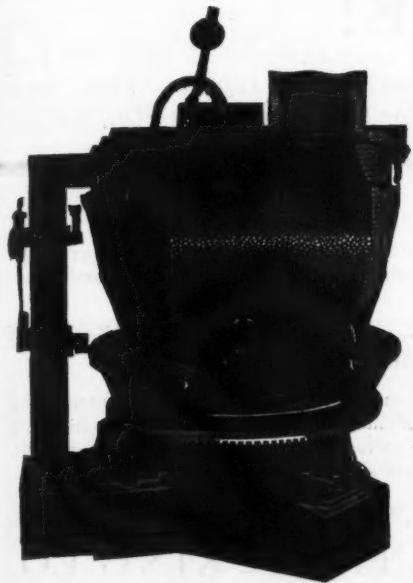
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Swell the bank account.  
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Selected by every large purchaser in the steel industry since the Armistice. Four hundred ordered in the first four years.

## POKERLESS PRODUCER-GAS MACHINE

Users everywhere testify with one voice to the superior satisfaction and low maintenance expense of this splendid machine. Difference in first cost comes back annually, every detail built for endurance.

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### WE-FU-GO AND SCAIFE WATER PURIFICATION SYSTEMS SOFTENING & FILTRATION FOR BOILER FEED AND ALL INDUSTRIAL USES

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ARMSTRONG INTERLOCKING  
SHAKING GRATES  
cut fuel costs from ten to  
forty per cent.  
—Prove it—  
your plant—our expense  
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"A gallon an hour or millions per hour"

Roberts filters, filtration plants and appliances are built to meet every clean water requirement—industrial, municipal or domestic.

Units up to 500,000 gals. daily capacity carried in stock.

Our Engineering Department is at your service.

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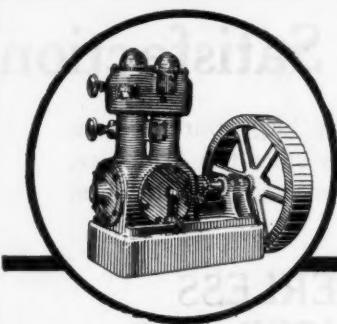
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ALL VARIETIES OF  
CHEMICAL FEEDING DEVICES

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*The significant factor when replacements and supplies are needed for Refrigerating Equipment*

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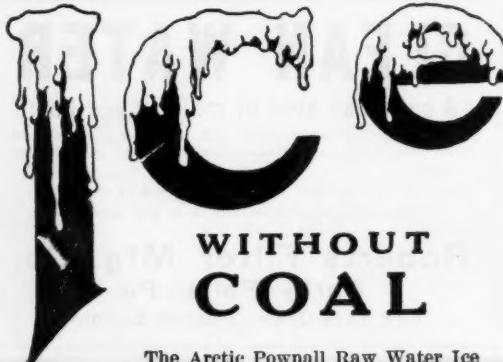
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York Construction Companies and Agencies are located in 56 of the principal cities of the United States and Canada.

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*Ice Making and Refrigerating Machinery Exclusively*  
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The Arctic Pownall Raw Water Ice Making System makes pure, crystal clear ice, using any motive power.

The ice produced is superior to that made by any other system.

Every block is uniform in size and weight, and the tops are absolutely level.

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*The Way*

**RAW WATER ICE PLANTS**



Unexcelled for Efficiency and Economy

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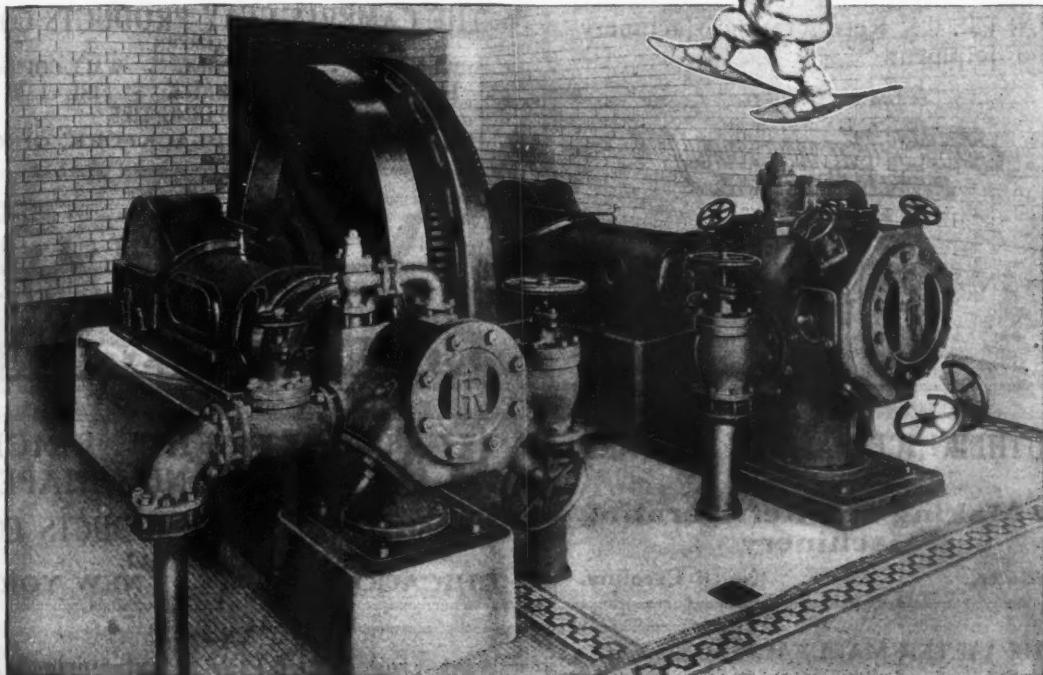
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Successful operation of the ammonia compression system for ice making or refrigeration depends upon the compressor. It is the vital factor of the plant. The Ingersoll-Rand Compressor is used in our compression system because we have found it to be the best on the market today. All features of design, material and workmanship responsible for the success of the Ingersoll-Rand Air and Gas Compressors are embodied in this machine. These features include plate valves for ammonia intake and discharge; hand controlled clearance pockets; enclosed frame construction with automatic lubrication and the proper application of the prime-mover.



Two-Stage Ammonia Compressor Installed in the Colonial Ice Cream Co., Philadelphia, Pa.

Our experience, as manufacturers of ice-making and refrigerating machinery, covering a period of forty-two years is freely at your service. Let us consult with you as to the proper machine your conditions demand.

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# Vogt Ice Making & Refrigerating Equipment

*Absorption-Compression*

**HENRY VOGT MACHINE CO.**

Incorporated

**LOUISVILLE, KY.**

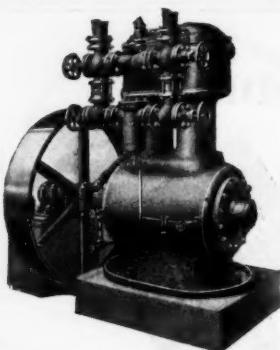
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**Ingersoll-Rand**

AMMONIA COMPRESSOR  
IS USED IN THE VOGT  
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MANUFACTURERS OF ICE-MAKING & REFRIGERATING MACHINERY, DROP FORGED STEEL VALVES & FITTINGS, WATER TUBE & HORIZONTAL RETURN TUBULAR BOILERS, OIL REFINERY EQUIPMENT



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conserve most of the nation's food, and Refrigerating Equipment is the

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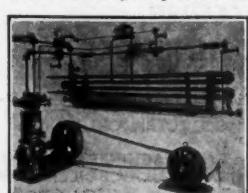
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STEVENS BROS. & CO.

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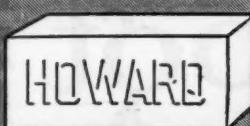
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100 Large and Small Machines and Men for New and Re-  
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These are the only  
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used by all branches of industry for manufacturing, production and for repair and maintenance work.

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Locking Lamp Guards  
Type 5764, for Brass Shell Sockets

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in handling a wide variety of magnetic materials has made the use of

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almost universal.

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They save time, money and labor and work unfailingly under the most adverse conditions.



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A type and size for every purpose—  
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SQUIRREL CAGE  
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Insulation unusually substantial.  
Guaranteed to carry the overload.  
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TIME TO

# MORSE DRIVES

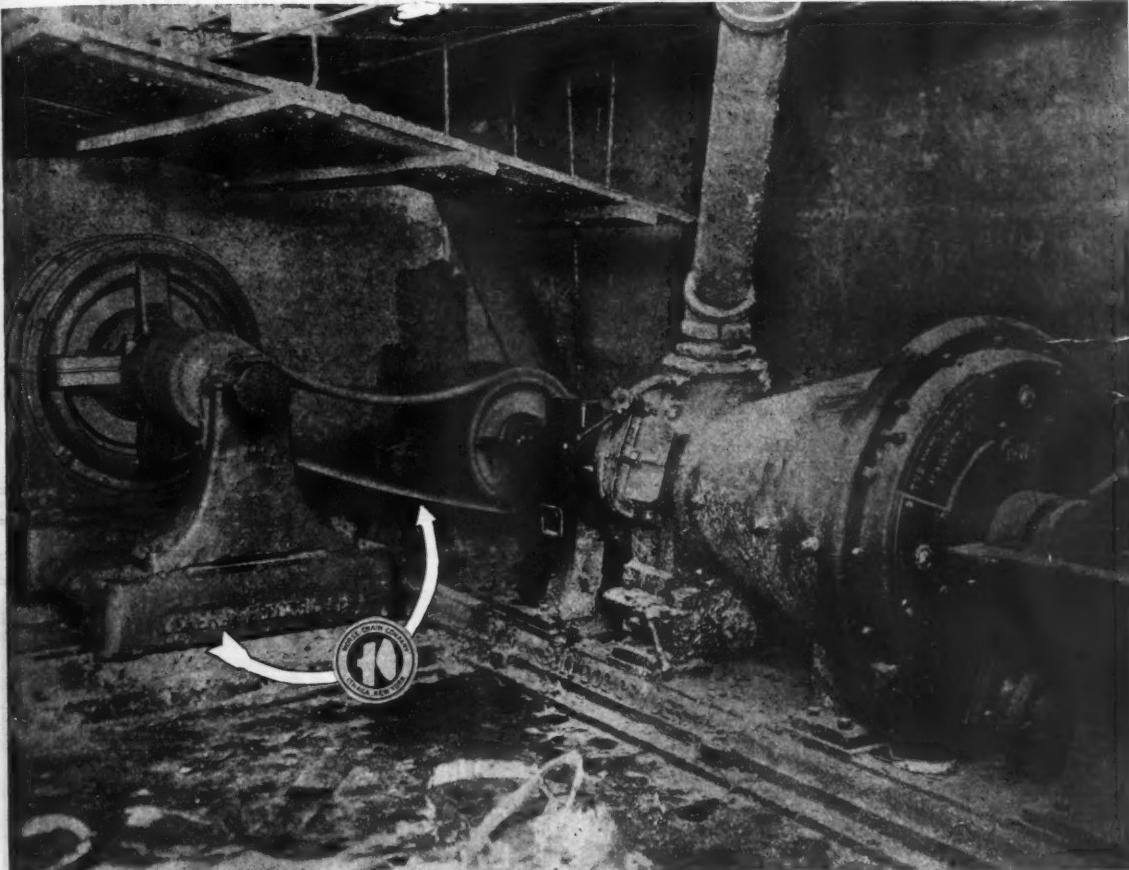
*The Sign of Efficiency*

*The Sign of Durability*

*Positive as Gears*

*Flexible as a Belt*

*Longer Life*



Fifteen Morse Silent Chain Drives in Congoleum Company Mill

The illustration shows one of the fifteen Morse Silent Chain Drives in the mill of the Congoleum Company, Asbestos, Maryland, driving a Jordan engine from a 150 H.P. motor on felt stock, one of the hardest kinds of stock to refine.

The mill uses the following Morse Chain Drives:—one 150 H.P.; four 100 H.P.; nine 90 H.P.; one 75 H.P., all doing splendid work.

Morse Chains are 99% efficient, silent, durable and economical to maintain.

Where you have unusual and hard conditions from wear and exposure, Morse Silent Chains prove their greatest worth.

For driving Jordan engines, beating engines, paper machine line shafts, and for many other places in the paper mill, the ideal drive is the Morse Silent Chain.

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WHEN the first "American" Pulleys were bought, the new user installed them on his faith in us and our claims for the pulley. But the power user today has the known, successful performance of nearly six million other "American" Pulleys back of every one he installs.

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**The American Pulley Co.**

Manufacturers of  
Steel Split Transmission  
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Large tonnages ranging in size from 3/16-inch to 6-inch diameter always on hand. Orders for almost any quantity filled upon receipt.

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CLUTCHESCOUPLINGS

SHAFTING EQUIPMENT for complete installations or single articles for the mechanical transmission of power by belts or ropes.

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**POWER TRANSMITTING MACHINERY**

August 3, 1922.

MANUFACTURERS RECORD.

19

# CRESSON-MORRIS

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So when your plant is working on that big job that means so much, you can forget your Cresson-Morris Transmission Machinery.

You may rest assured that its built-in dependability is your best insurance against delays and failures—a guarantee for the smooth delivery of efficient power.

Your every power transmission requirement, from smallest pulley up, can be met from the Cresson-Morris Line.

If you have a transmission problem—sixty years of Cresson-Morris experience and a staff of competent engineers are at your service.

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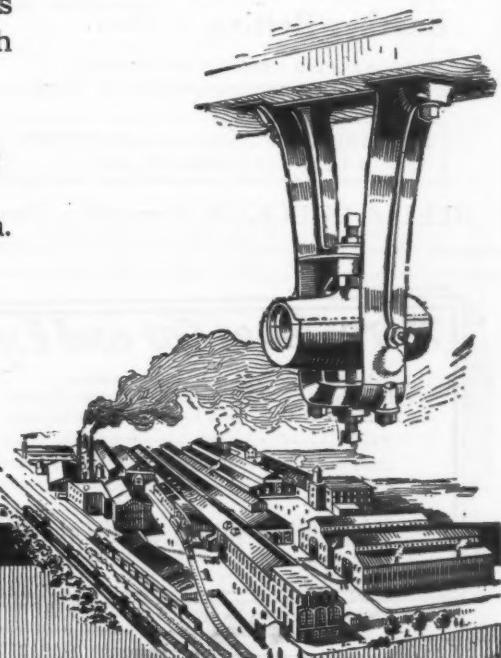
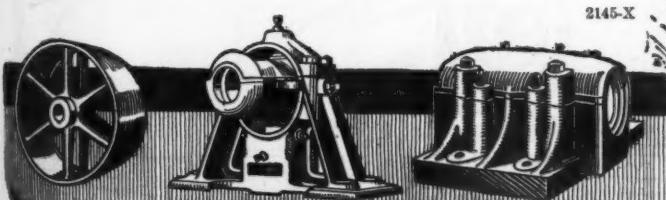
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Large and Complete Stocks

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Unexcelled for use in damp and steamy places.

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A new development in gear design with a tooth that is strongest at the base where others are weakest. Spur, herringbone, helical, and spiral types, from 2 in. to 40 ft. diameter.

Get catalog No. 265—it's new and interesting

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## CHESAPEAKE STITCHED CANVAS BELTING

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CHESAPEAKE BELTING CO.  
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Eliminate Waste; Conserve Time and Labor;  
Reduce Repair Bills to the very minimum.

Their material is the purest, densest and  
most durable, and has proven beyond dispute  
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influences.

MORE-JONES BRASS & METAL CO.  
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is adapted to many special purposes in connection with manufactured products wherever a smooth, round, firm cord is required. It is far more durable in running over pulleys and for many other uses than twisted cord, chain, wire or leather.

### Samson Cord

is used extensively in connection with the manufacture of automobile accessories, bags, books, drums, electrical supplies, garters, horse equipment, safety devices, shoes, suspenders and a great many others. About the factory itself, it is used with drives, dampers, elevators, fire doors, hoists, windows, ventilators, etc.

It is made in all colors, from 1/32-in. to 1 1/2-in. diameter in hard and soft braid, glazed, unglazed or waterproofed finish, with or without wire center. Special cord for special uses.

Samples and further information gladly sent on request.

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## BALTIMORE BELTING CO.

Manufacturers of  
OAK TANNED LEATHER BELTING,  
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BALTIMORE, MD.



The hoist that gives longer life and smoother action.

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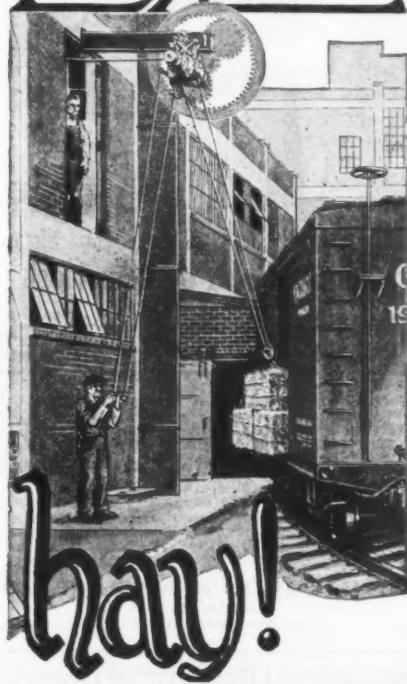


TRADE MARK REG.  
U. S. PAT. OFFICE  
**PORTABLE  
ELEVATOR**

The best piling machine you can get.

Ask for Catalog 92-B

## THE SHEPARD ELECTRIC *LIFTABOUT*



THE Willow Brook Dairy, Mt. Vernon, N. Y. sought ease, speed, and a *true saving* in handling hay. They found the answer in the *LiftAbout*. Unloading, storing, distributing—this new and smaller electric hoist does all, with less labor, and reduces a job of hours to minutes.

*LiftAbouts* have displaced many old fashioned and expensive ways of moving and lifting loads. They have solved the long standing question of the *best way to rehandle at the lowest cost*. Power lifting economies are now enjoyed by thousands, many of whom thought they couldn't use electric hoists. The *LiftAbout* may be your hoist.

### Low cost

Due to standardized manufacture and quantity production, the *LiftAbout* is surprisingly low priced—it's maintenance negligible—its installation easy and economical.

### Performance-proven design

Incorporated in the *LiftAbout* are the exclusive features which have made "Shepards" the best known and most widely used electric hoists. Fool-proof, damp-proof, dust-proof, fume-proof throughout.

### Drop a line

A request from you sends a *LiftAbout* bulletin, or, if you desire, a representative who can tell of cases parallel to yours where loads are moved fast, safely, and at greatly reduced cost.

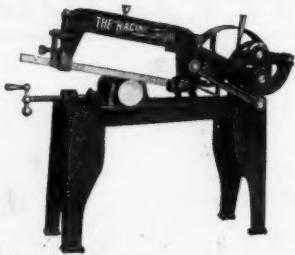
*Shepard also builds Electric Cranes and Hoists in capacities to 30 tons.*

**SHEPARD ELECTRIC CRANE & HOIST CO.**  
362 Schuyler Ave., Montour Falls, N. Y.

Branches in principal cities

Member Electric Hoist Manufacturers' Association





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**RACINE TOOL & MACHINE CO.**  
Catalog M. R.  
Racine, Wis., U. S. A.

### Mechanical Lift-Positive Draw Cut



## PORTABLE TOOL STANDS

Time and money  
Savers For Shops.

Our portable Tool Stands are easily moved anywhere. They carry any load anywhere. The modern way is to take your tools, vise and bench to your work.

We also make Toolholders,  
Expanding Mandrels, Shop  
Furniture, Vises, etc.

**WESTERN TOOL & MANUFACTURING CO.**

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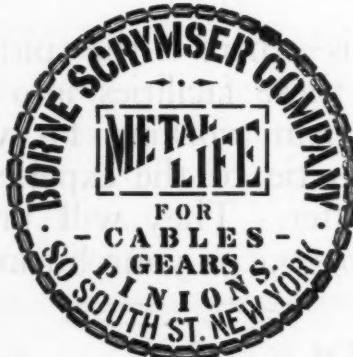
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**"ARMCO" INGOT IRON RESISTS RUST**



August 3, 1922.

MANUFACTURERS RECORD.

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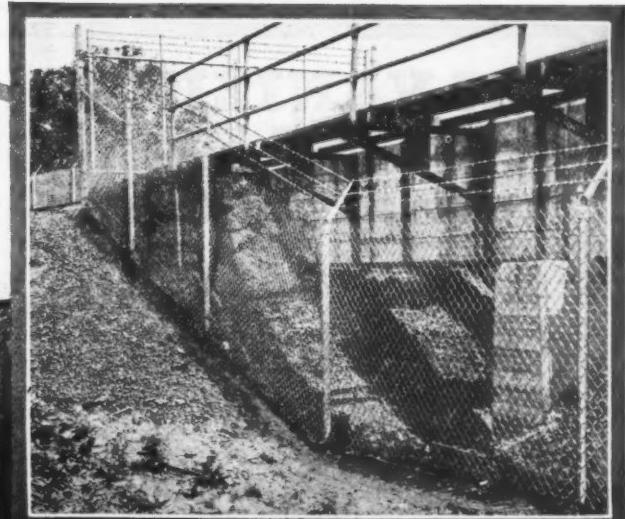
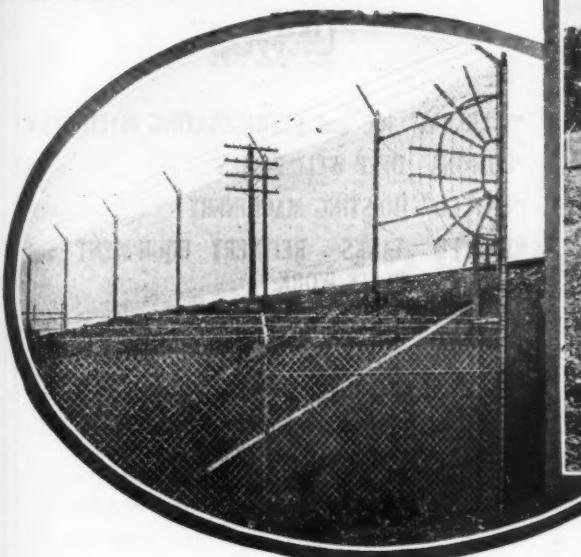
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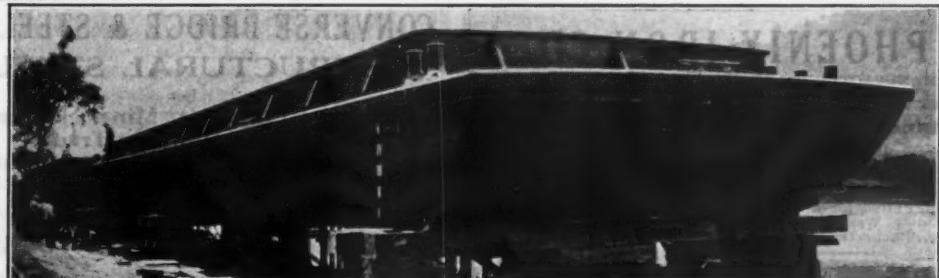
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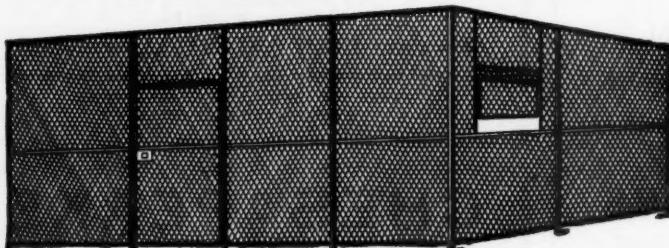
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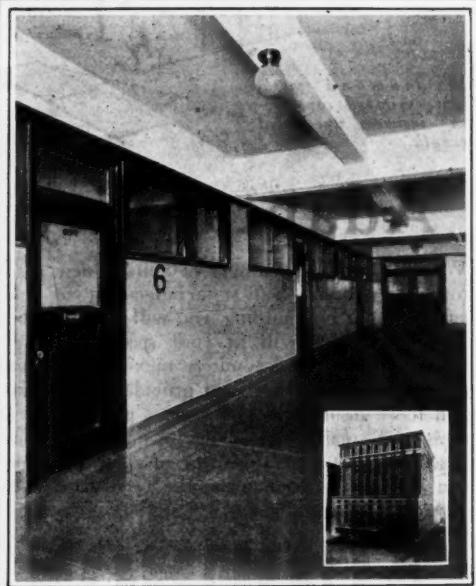
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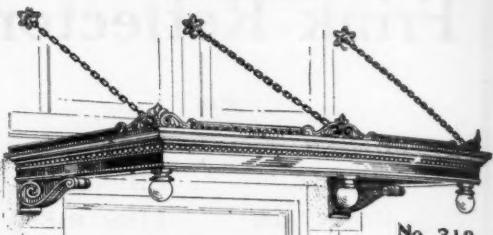
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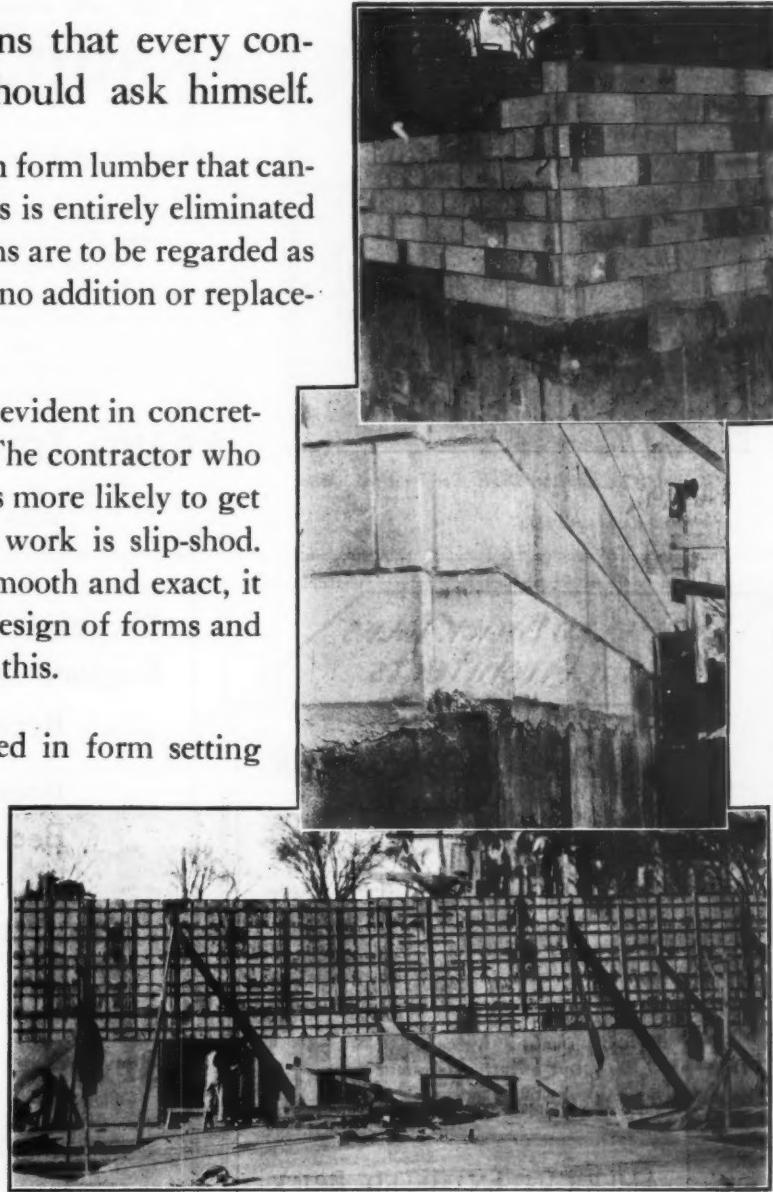
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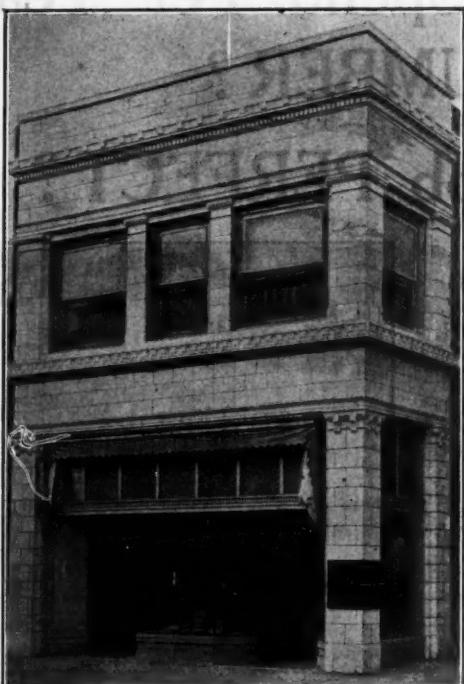
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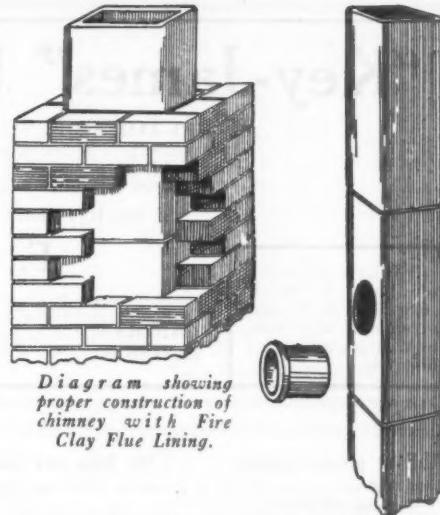
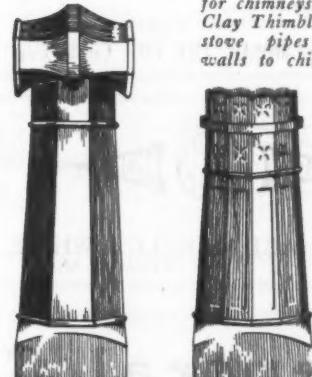


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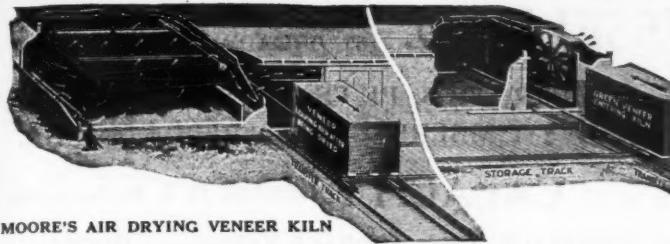
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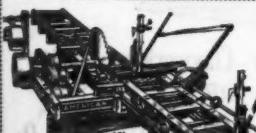
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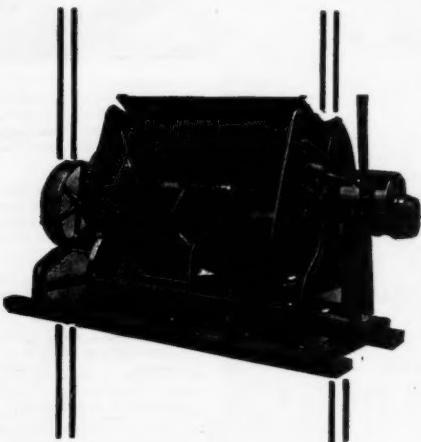
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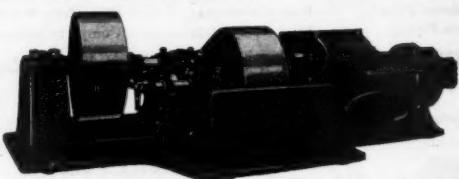
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Complete Equipment for Clayworking Plants  
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Dayton, Ohio

August 3, 1922.

## MANUFACTURERS RECORD.

49

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Then the Lowell Bleachery equipped their new plant at St. Louis with the Ridgway Elevator.

Then in 1919 Lowell Bleachery duplicated the 1916 order for the Lowell plant.

And now in 1922 Lowell Bleachery have just placed their order for Ridgway Elevator equipment for the new plant they are building at Griffin, Ga.

These elevators are 6 tons capacity with platforms about 12 x 20 ft.

Without a single counterbalance.

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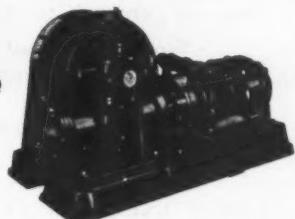
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We can change your hand power to electric		

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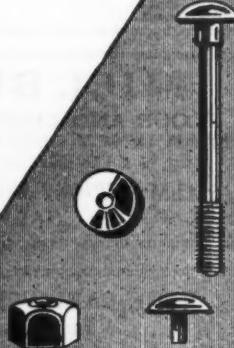
*Arrow indicates Mayari Steel Heat Treated Bolt which held securely while the heavy frog arm was bent in derailment.*  
Mayari Steel is a natural alloy nickel chromium steel made exclusively by the Bethlehem Steel Company. All Bethlehem Manganese Track Work is equipped with Mayari Steel Heat Treated Bolts.

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INFORCEMENT BARS.

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Price List.



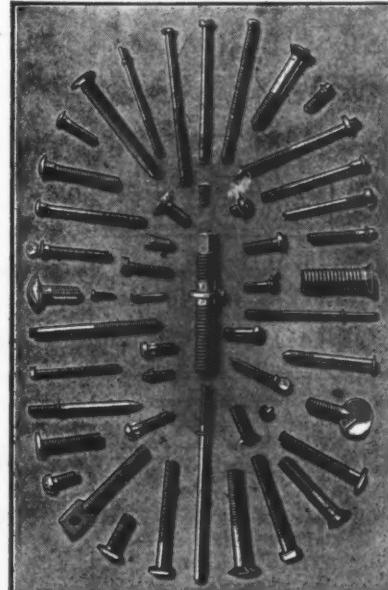
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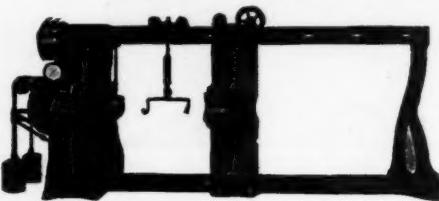


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**MOST  
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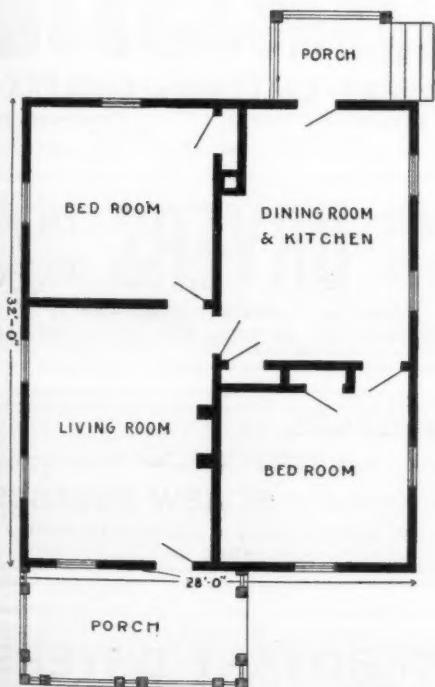


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Sterling Cotton Mills of Franklinton, N. C., needed only a few employees' houses, but made a satisfactory saving in cost—as well as time and trouble—by having Minter build them. While our equipment is big enough to handle a housing job of any size, we can save money for textile mills which want one or a dozen homes for additional employees. Many textile mills have bought Minter Homes this spring.

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No. 21

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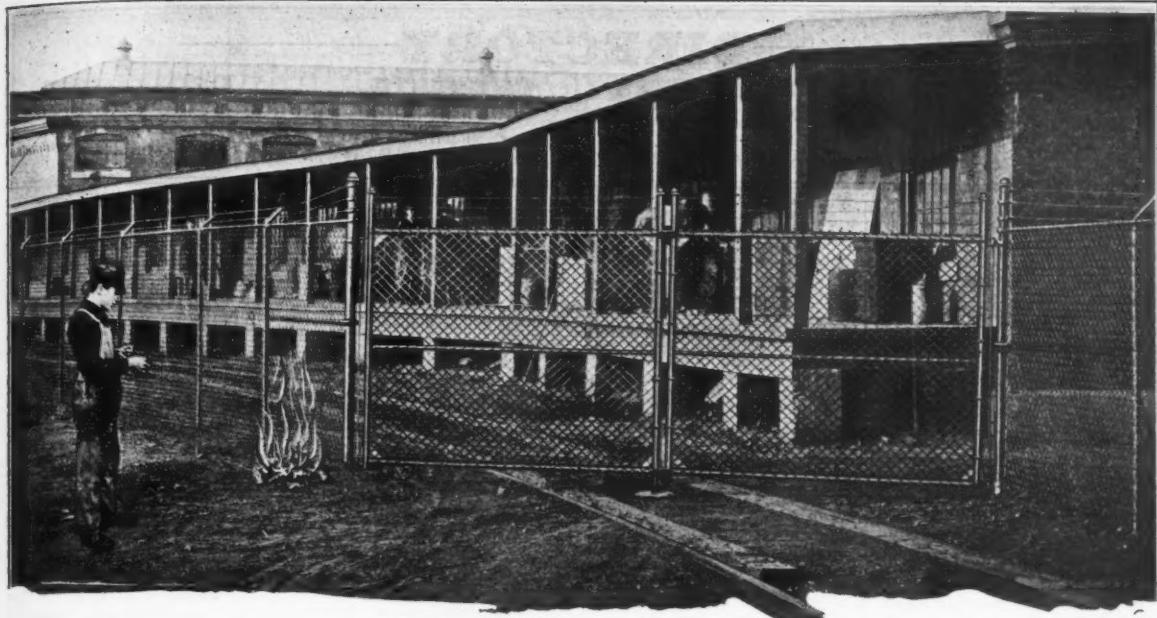
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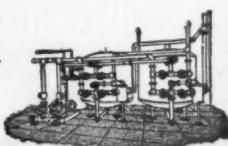
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# Manufacturers Record

## Exponent of America

AUGUST 3, 1922.

Volume LXXXII

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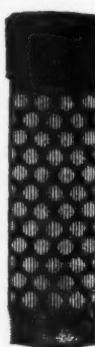
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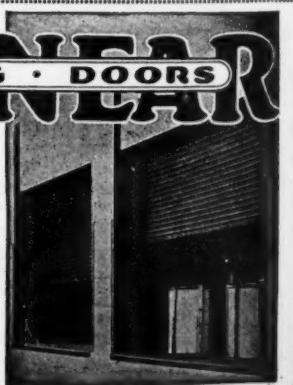
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# Manufacturers Record

EXONENT OF AMERICA

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## THE RIGHT TO WORK.

THE following card is being widely mailed from Louisville, Ky. Every business man, and every commercial organization could probably follow the example of Louisville people in this respect.

1922

### FOR LAW AND ORDER, PEACE AND GOOD WILL.

The right to work, unmolested, in any lawful employment in a lawful manner, is the sacred right of every American Citizen—of every human being, everywhere. The President of The United States by Proclamation July 11, 1922, declares:

"The maintained supremacy of the law is the first obligation of the Government and all the citizenship of our country.

"Therefore, I invite the co-operation of all public authorities, States and municipalities, and the aid of all good citizens to uphold the laws and to preserve the public peace and to facilitate those operations in safety which are essential to life and liberty and the security of property and our common public welfare."

The Governor of Kentucky, by Proclamation dated July 11, 1922, declared:

"The highest duty of the Governor of Kentucky is to maintain at all times and at all hazards the unchallenged supremacy of the law and to protect the rights and property of its citizens and to assure every man a free exercise of his constitutional rights.

"The right to seek employment and to labor for another is a constitutional privilege which cannot and shall not be denied to any man, nor shall the exercise of this right be interfered with by force, violence or intimidation."

The lawless slogan of some misguided people "we won't work and you shant work" must go to the scrap pile forever. Hand this to your neighbor.

Keep this card moving, Americans!

## WILL GOVERNMENT AGAIN SURRENDER TO ORGANIZED LAWLESSNESS?

IT is the general understanding in Washington, as this is written, that the railway executives will, under protest, accept the President's plan for a settlement of the railroad strike. There are indications that the best railroad brains and backbones, nevertheless, are not prepared to make a peace with brigandage. If union labor, having again held its pistol against the temple of Government, once more has forced the Government to "stand and deliver," then we may continue to have the forms and slogans of republicanism, but the essence of it will be with us no more.

What the President's plan means is an acknowledgement that a small group of organized railroad workers have the physical power to tie up transportation in America, that this power is recognized and that terms will be made accordingly. It is the Adamson Law all over again, with more Adamson laws to come; for the unions, having again won so easy and significant a triumph, will be apt in new attacks. Sovereignty itself tells them they can get what they demand.

The national agreements are twin-sisters of bankruptcy. It is an economic absurdity to attempt standardization of wages and working conditions throughout the length and breadth of this vast country. As well attempt to equalize the climate by act of Congress. A fair wage in Mobile might be poverty in Chicago, and a fair wage in Chicago might mean, in Mobile, the setting up of a wage scale which would be economically ruinous to all employers of labor other than the railroads.

The great Pennsylvania railroad has been able to negotiate agreements with its own employes that fundamentally promote the efficient conduct of the road and give to earnest workers the promise of high wages in accordance with their deserts. It is proposed by the national authority, however, to compel the Pennsylvania system to discard the bases of efficiency and substitute therefor a notoriously inefficient and destructive method of employment.

Who pays? Men talk of waste in government, of the reckless extravagance of employes paid by the taxpayers, but every loafer in the railroad establishment, every ruling of a national wage board that ignores economic conditions and attempts to buy peace by compelling acquiescence in wage rulings that necessarily encourage inefficiency, constitute a direct tax on every consumer and producer in the United States, weaken the strength of our position in foreign trade and assist to perpetuate that conditions of affairs which drives agriculture into ruin because the cost of distribution simply eats up what might otherwise have been the profit to the producer.

Who is it that pays? Who is it that the union chiefs hold up? The President cannot foot the bill; neither can Secretary Hoover. What they do, and the instrumentalities they control, is to enter into a compact authorizing the unions to levy toll on the public. Taxes are taxes, whether imposed by act of Congress or under license by executive officers.

The railroads must either be under public or under private control. There is no alternative. If the President of the United States can compel the railway executives, against their will, to accept wage scales and employment conditions irrespective of the ability of the roads to meet the resulting commitments, it is sheer nonsense to talk about private operation. We understand that one of the Eastern executives said, in substance, at the White House: "Let the Government, if it wants to, take the roads and operate them. As for us, there is but one way to operate and that is to operate. A dummy cannot run a railroad."

We do not believe that public opinion in the United States will countenance a surrender to union labor at this time. It is no secret that leading business men, from the great centers and from the small centers, have during the last few days implored the railway executives and the coal operators not to yield. There are such things as free men left in the United States, men who love independence and detest tyranny, from within or without. Their eyes see clearly. There is no question in their minds as to what the underlying issue is. "Rule or ruin," the labor czars have cried, and on that issue some millions of good Americans want a fight to the finish. "You shall not rule and you shall not ruin!" that is the ultimatum of virile Americans and they will hang their heads in shame if the trustees of their authority compromise that position. The Government errs grievously if it reads public sentiment otherwise. There is conclusive evidence that the sentiment of productive America would prefer to shut down all industry and wage a fight, no matter how slow, for a return to order and independence rather than again compromise with that inner dynasty of irresponsible labor chiefs who have defied both the economic and the statute law.

Nor are these men willing to live up to the minor commitments they may make. We find one William Hard, who writes for the Hearst newspapers in terms that show his mental consanguinity with unionism's selfish brats, boldly announcing that the settlement of the seniority question would not mean anything, anyhow, for, says he, "the returned strikers make life unendurable for the 'loyal' men who remained at work. They ostracize them in the shops. They ostracize them in their homes. The wives of the men who were 'loyal' to the unions refuse to associate with the wives of men who were 'loyal' to the companies. Their children turn away from the children of 'scabs.' 'The scabs,' being in the minority, are unable to endure this pressure. After a while most of them quit work and leave town." Yet, to the men who remain loyal, the public and the railroads owe a great debt, for they are the ones who save the situation and prevent starvation. They are the humble soldiers of humanity, deserving of all applause. For the nation to desert them would be blackest treachery.

We are against any compromise with the "Terror." It is a

force that terrorizes the very men it is supposed to represent. A majority of the railroad workers would themselves repudiate the action of their leaders were it not that they also are coerced. If the Government, in turn, shows the yellow streak, what defense is left for peaceful and honorable men? The President declares that unless the clear right of any man to work is forever guaranteed, there is no freedom left. Yet, even as the union chiefs compromise, under a plan that is a victory for them, a newspaper writer points out that once the union men get their jobs back they are going to see that the "loyal" employees are thumbscrewed into the streets. That makes a mockery of claims of freedom.

**IF WE ARE TO HAVE A REPETITION OF THE ADAMSON AFFAIR, MORE HUMILIATING TO THE NATION THAN ANY DEFEAT SUFFERED ON THE FIELD OF BATTLE, THERE WILL HAVE TO BE A NEW STRUGGLE AT THE POLLS THAT THE PEOPLE MAY ELECT TO OFFICE A CONGRESS AND AN ADMINISTRATION WHICH WILL RETRIEVE THE SOVEREIGNTY OF THE GOVERNMENT.**

Moreover, if the Government is going to guarantee employment and wages, it follows as the day the night, that it must put upon the employes a compensatory obligation not to strike. By that means, perhaps, some vestige of honor and dignity and economic sense could be restored. The railroads are compelled to operate, under penalty of losing their franchises. The Government can guarantee no wages unless those receiving the wages guarantee, in their turn, performance of duty at all times.

Extra-legal solutions of strike problems by elected authority and the substitution of expediency for law are always dangerous. Few compromises do more than aggravate a problem. They are palliatives, not cures. This country could survive this strike and a dozen like it, but no country can long endure compromise with lawlessness and a surrender of sovereignty to organized classes which by coercion appropriate to themselves special rights and privileges.

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### GOOD DOCTRINE.

S. H. GAITSKILL,  
Breeder of  
Shorthorn Cattle and Duroc Hogs.

McIntosh, Fla., July 17.

*Editor Manufacturers Record:*

I very much hope that you will keep up your fight for law and order, individual rights, upholding of the Constitution and against mob law in any form. I think the affair at Herrin, Ill. ought to be a severe prod to all law-abiding people and make them wide-awake as to where the Labor Unions are tending. A statesman once asked the question "Shall we lie supinely upon our backs and let these things be done?" We, the people, should speak out in no uncertain tones. I think that our officials, high and low, should say to the Labor Unions just as the world says to Russia, "We will have no dealings with you until you fully recognize individual rights. Say to Mr. Jewell and Mr. Lewis and Mr. Gompers, go wash and cleanse the order before you come to us for recognition of any kind."

S. H. GAITSKILL.

August 3, 1922.

## MANUFACTURERS RECORD.

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## SAFETY OF THE NATION REQUIRES THAT AMERICAN CHEMICAL INDUSTRY BE NOT DESTROYED.

RECENTLY President Harding issued an order for the Chemical Foundation to turn back to the Government the German chemical patents assigned to it during the war period. This order has caused widespread consternation among the chemical interests of this country who were largely responsible for building up the American Chemical industry. So serious is the situation considered by the American Chemical Society that its president, Dr. Edgar F. Smith, has appointed a committee to serve with him and to seek a conference with President Harding to lay before him the far-reaching effects which the carrying out of the order to the Foundation will have upon chemistry in America. This committee is composed of the following gentlemen, none of whom are dye manufacturers or connected with the Chemical Foundation:

Dr. J. E. Teeple, consulting chemist, New York, treasurer of the American Chemical Society.

Dr. R. H. McKee, head of the Department of Chemical Engineering, Columbia University.

Dr. J. F. Norris, professor of organic chemistry, Massachusetts Institute of Technology, Cambridge, Mass.

Dr. A. D. Little, consulting chemist, Cambridge, Mass., past president of the American Chemical Society and of the American Institute of Chemical Engineers.

E. R. Weidlein, director, Mellon Institute of Industrial Research, Pittsburgh, Pa.

Dr. George D. Rosengarten, director and member advisory committee on National Policy, American Chemical Society, Philadelphia, Pa.

Dr. Julius Stieglitz, University of Chicago.

William Hoskins, consulting chemist, Chicago, Ill.

H. E. Howe, editor, Journal of Industrial & Engineering Chemistry, member National Research Council.

A request for a conference with the President was made, but the committee was advised this could not be granted at present, owing to other urgent and imperative matters requiring the President's immediate attention. The committee will persist in its efforts to see the President, believing that he would not have issued the order if he had possessed full information or had called into conference unprejudiced persons well able to advise with him.

From the beginning of the efforts to establish an American chemical industry, the MANUFACTURERS RECORD has fought side by side with the men seeking to accomplish this desirable end, and we have always recognized that chemical industries were key industries and therefore essential to industrial welfare in times of peace and extremely vital in times of war. Every effort to establish such industries prior to the beginning of the late war was repeatedly frustrated by the German chemical interests, which with their governmental backing invariably crushed every new enterprise as fast as it was started in this country. The war, which cut off the German chemical supplies as well as the conscienceless competition of the Germans, gave America its opportunity to forever free itself of dependence on outside sources. Many industries in the country became in urgent need of dyes and chemicals, and American chemists were appealed to to meet the situation. These chemists applied themselves to the task, and their efforts were crowned with eminent success.

When our country entered the war the establishment of a broader range of American chemical industries became all the more important; indeed, it may be said that our very existence depended upon their development. How the American chemists threw themselves into the breach; how in a very comparatively short period almost the impossible was accomplished, and the very large part the industry played in the successful outcome of the war will always be to the

everlasting credit of the men of this industry. America owes them a debt of which the public generally has but little knowledge. Is the reward for this to be placing them again in the merciless hands of the German chemical trusts? Despite the claims of certain importers of German dyes and chemicals that an embargo is not needed; despite the claims of these and other interests that are seeking to destroy the Chemical Foundation, the cold single fact remains, if the Government does not throw its powerful protective arm around the American chemical industry it will be wiped out very quickly, and it is doubtful if ever again it could be revived.

Surely it could not be suspected that political exigencies, such as the voting strength of the German-American Alliance, which indorsed the movement to destroy the Chemical Foundation, could have had weight in the action taken; yet the very fact that this conference did command the move is sufficient to arouse the suspicions of those loyal Americans who do not propose to stand idly by while such bodies condemn as iniquitous the splendid work accomplished by the Alien Property Custodian during the war in ferreting out and taking over the German-owned plants in this country. This was an arduous task; but one well performed, and in spite of efforts of so-called American lawyers who did not hesitate to lend their legal talents to German interests in the endeavor to hide German ownership in some of these industries. That any organization has the effrontery to refer to this work in a formal resolution as iniquitous is sufficient to arouse suspicions of those who are jealously guarding the American chemical industry.

No one can look over the list of names of eminent American chemists who were largely responsible for the development of the American chemical industry during the war period, and the very aggressive fight which these men made to keep this industry alive, without realizing that the motives of such men cannot be questioned. Their entire efforts during the war period and since have been devoted solely to thoroughly establishing an American chemical industry; and in justice to the magnificent work which these men have accomplished, President Harding owes it to himself and to the country to give them an opportunity of placing the proper facts before him.

## IS THE GOVERNMENT WORKING POST-OFFICE EMPLOYEES 12 HOURS A DAY?

MR. EDWARD L. THOMAS, president of the Thomas Grate Bar Co., of Birmingham, in a letter to the MANUFACTURERS RECORD writes:

"Can't we have another White House dinner and get President Harding to invite the Postmaster General and ask him to clean house in the postal department and not place the Government in the ridiculous position of asking industry to endeavor to eliminate the twelve-hour shift for organized men in the interest of humanity, while they are working, men and women in the post office of the United States for twelve hours?

"A few days ago I was talking with an employe in the Birmingham Post Office and was amazed when I learned that this employe had to go to work at 6:30 in the morning and did not get off until 6 o'clock in the afternoon, with only 30 minutes for the noon hour. I asked if this was an isolated case, or if others did the same thing, and the reply was that everybody in that department did it; and without directly saying so I was given to understand that other departments did likewise.

"Will you not turn on a little publicity and help to secure for the Government and its postal employes some consistency in the matter of hours of labor?"

## SOME OF THE INFLUENCES BACK OF NATIONAL LAWLESSNESS AND CRIMINALITY.

THE situation in the mining regions of West Virginia, where with almost indescribable criminality on their part union miners and others are seeking to destroy the non-union mining operations in that State, so aptly described in the MANUFACTURERS RECORD of July 20 by Mr. Albert Phenis, a member of our staff, has called forth from Mr. R. H. Bond, one of the Vice-Presidents of McCormick & Company of Baltimore, the following interesting comment on the situation:

I have read with great interest your masterly article in the July 20 number of the MANUFACTURERS RECORD, concerning the situation in the mining country of West Virginia. It is a plain, unvarnished tale, conservatively and yet forcefully told. I congratulate you on bringing these important and disturbing facts to the attention of the people. I wish it were possible for every man and woman in this country to read and ponder this article.

While the MANUFACTURERS RECORD has a big circulation, generally speaking it reaches only business people and men in like situation in life. It does not generally reach those who work with their hands, nor the farmers and the general rank and file of the people, and hence much good that might be accomplished among the regular run of our citizenship by this plain statement of the facts is lost.

The principal cause of much of the trouble which confronts our country is ignorance of the situation. The labor unions, the socialists, the Bolsheviks and the anarchists are steadily spreading misleading and vicious propaganda among the people who are peculiarly susceptible to that kind of thing, whereas the forces of law and order are non-vocal, and a view of the opposite side of the shield is not presented to that class of our people who need it most. Surely, something effective must be done to stop the lawless, selfish and class spirit which is abroad in the land, or this country and civilization are lost. If there ever was a time when the full power of those who administer the laws of the country—national, state and municipal—should be exerted to stamp out by any means necessary the lawlessness, crime, bloodshed and murder now rampant, **it is now. There must be no pandering to or condoning lawlessness by those in authority over us for fear of the effect of a contrary course on their personal or political fortunes.**

We should pray for courage upon the part of all officials to enforce to the letter the law against all violators, no matter to what class of society they may belong, and all men who love their country and stand for the blessings of civilization must uphold to the uttermost limit the rightful acts of those who execute the laws.

If our officials and the right-thinking people of the land would do this, our country would have a re-baptism in the faith and principles of Washington and the Fathers of the Republic. If they do not take this stand, while it may be deferred temporarily, the end of those things which are held dear by our people is in sight.

You are familiar with the history of the old days in the West when the reign of lawlessness, thievery and murder became unbearable, and what happened when decent and right-thinking men decided to put a stop to it and to see that law and order were restored. The means adopted to accomplish this were drastic but effective, and in a few short weeks, the rule of the rioter, the bad man, the murderer, the thief, and the things which followed in their trail were ended.

Now is the time for strong men and women to take a militant stand for law, order and the pursuit of happiness; without law and order, happiness is an unattainable dream.

Mr. Bond's statement is correct from every point of view; but our people generally do not seem to have fully awakened to the seriousness of the conditions which confront us. Our land has been overrun by the worst class of foreign immigrants who have brought to us all of the evils of peoples who have been suppressed for centuries. Here they think that liberty means that they are to have unbridled license to destroy whatever seems to be in their way. It is in part the inevitable revolt of peoples who generation after generation have been held in subjection in Europe and who have developed an intense hatred to all law and all government, and they have come to America with the belief that this is not simply a land of the free but a land in which every man is free to kill anybody who stands in his way. These peoples,

misled by radical trade union agitators, have become a serious menace. They are being treated by the American people, and sometimes by the Government as though their welfare was of greater importance than the welfare of all other classes in the country. Their demands, made through trade unions, are discussed as though they were superior to any requirement for the maintenance of that liberty for which this country was founded. This vicious, unscrupulous labor element has brought about a very unfortunate similar spirit among many native born Americans.

The imaginary power of the American Federation of Labor and of the labor organizations which count largely upon these foreigners for membership has made half of the public men in this country perfumed cowards, afraid to stand for the right if in doing so they have to antagonize union labor.

But many so-called respectable people are in part responsible for this spirit of lawlessness. They have themselves been lawless. The Federal Reserve System has broken the law; banks are seeking to get around a law which forbids their having branches; the Shipping Board openly violates law in order to make its ships profitable. Men who should stand for honor and integrity and observance of law, bankers, lawyers and others are constantly denouncing the Prohibition laws and openly violating them and saying that they cannot be enforced and therefore must be repealed. Automobile speeders are constantly violating the speed laws. **The drinking man is the speeder on the highway of life, dangerous to himself and to the public.**

In this they are placing a premium upon criminality and encouraging criminal classes to believe that the Government must repeal any law that is not in harmony with the views of law-breakers. The men who are violating law, whether it be the Federal Reserve Board, or banks, or the Shipping Board, or men in private life, are to a very large extent responsible for all of the spirit of unrest and law violation in every part of this country. We have no right to expect freedom from riots and murder on the part of the foreign element or even of the American element on strike so long as law violation is condoned on the part of the people of supposed respectability and of Government officials sworn to uphold all law.

We must clean house from top to bottom. It behooves President Harding and every Government official, down to the sheriff of the smallest county or to the policeman on his beat, to see that law violation is punished to the fullest extent of the penalty involved.

## THE NATION NEEDS TO BE AROUSED.

Akron, O., July 22

*Editor Manufacturers Record:*

We very much appreciate your editorials on the front page of your publication of July 13 and 20. It is now squarely up to the people, who is to be supreme, Gompers or the Government? One or the other must give way; there is no middle ground, and this has been a growing, burning question for twenty years. There has been a gradual process of elimination and disrespect for Government, order, and constitution.

Where is the "American Bill of Rights" and amendments made to the Constitution to guarantee these privileges? How much longer will this American Government last with the forces that are now at work to undermine and destroy it?

Go on with the good work. Something must be said and done to arouse the American people from the "rut" and lethargy into which we have fallen.

Wishing you the pen and power to continue, we are, etc.,

The Taplin-Rice-Clerkin Co.

W.M. CLEBKIN.  
President.

August 3, 1922.

## ONE AND ONLY WAY TO OVERCOME HATRED OF LAW AND ORDER NOW RAMPANT IN THE WORLD.

HATRED, all inclusive hatred; class hatred; hatred of laws and hatred of God, this is the hideous creed of the Bolsheviks and it is an alarming fact that this is the creed accepted and proclaimed by radical labor leaders throughout the world today. Mushy sentimentalism among sociologists, college professors, newspaper writers, ministers of the gospel and the rank and file of individual laymen "uplifters," whether expressed knowingly or unknowingly as to consequences, is an efficient aid in spreading this gospel of hate among wage workers everywhere.

What is the origin of this enmity to law and order, this menace to the very existence of our form of Government, and what remedies may be found and applied to stay the destruction that threatens to overtake us?

These are questions that thoughtful men are asking now in all soberness, for no one who really gets beneath the surface of the underlying spirit that actuates the revolt against every sort of established conditions, so rampant throughout the world today, can be otherwise than alarmed and fearful that, unless effectively and speedily checked, the tendencies of the times will bear us directly on to wreck and chaos.

Any real study of the coal strike, as an example, will inevitably lead to a conviction that the fundamental causes for the present situation in that industry are to be found in the same sources of Karl Marxian warfare against civilization, religion and the established order of society as are responsible for the unspeakable chaos that has been wrought to Russia.

No clearer presentation of the matter has been given than that contained in a letter from Mr. W. M. Wiley, manager of a large coal operation, formerly union but now open shop, in Boone County, W. Va., written to a ministerial friend last March, from which we are permitted to print some extracts. Said Mr. Wiley:

"Previous to the teachings of Karl Marx, socialism was an idealistic theory, generally promulgated to attract people who lacked thrift and had little, because those who had worked and saved would be forced to divide with the thrifless.

"Karl Marx, a German, made a completely new departure in announcing what he called scientific socialism. The socialism of Marx was a doctrine of militant action as opposed to the idealistic theories which had preceded them. His fundamental axioms were:

"First: that the working man who was the creator of the finished work was entitled to all of the proceeds of such work; or, as it was called, "the full social value of the work." The manager, accountants and capital were to receive no portion of the proceeds, and it was taught that if they received any portion, the workingman was cheated of his just dues. This theory—that the miner should have the full social value of his work—was adopted into the constitution of the United Mine Workers of America and it was explained at the meeting, when the adoption occurred, that the 'full social value' meant all the proceeds of the sale, so that capital would receive nothing.

"The second great axiom taught by Marx was that, as the factories and the going concerns represented the proceeds of the workingman of which he had been robbed, the workingman was encouraged and taught to take over the factories and business management of the different plants by force and operate them for himself, so that he would receive the full social value of his work. In order to induce the workman to commit the overt acts necessary to bring about this result, a systematic propaganda of hate against the employer was started and maintained. Heretofore, the capitalist had been held up to the contempt of the people, but under Marx's theory, the manager was taught to be the object of hate, and the workingman was encouraged to forcibly take possession of the various businesses. The next obstacle which confronted Marx in his progress was that the laws prevented such conduct. Therefore, a hatred of laws was taught, and of constables, of policemen, and of

courts, or anybody representing the law or constituted authority.

The next difficulty Marx found was the fundamental principles of right and wrong which a mother teaches her children. She taught them of her God as the Being who demanded not the sacrifice of blood but the sacrifice of selfishness. She taught that her God demanded self-control, self-restraint and a sense of mutual obligation. It was to the tender mercies of her God she every night committed her loved ones in prayer. This God who had been taught by the lips of the loved mother to be revered, and upon whose principles the characters of men had been built, had to be torn down, and Karl Marx himself put in His place, and the Marxian doctrine of hate had to supplant the doctrine of love of God. Karl Marx, without the slightest hesitation, couched his lance and undertook to take from the people of the world the God of their mothers and to leave them without household gods except the doctrines of Karl Marx, which was to take the place of the mother's God and the mother's principles. In doing this he negated the mother's teachings; that the sacrifices acceptable to Almighty God were those of self-restraint and self-control, and he put in their place the god to whom the sacrifices of license, uncontrolled passions and lack of respect for others was the essential teaching.

To a very considerable extent, these doctrines have gone over the whole world. In the place of the doctrine of love which Jesus Christ taught, Karl Marx has taught the doctrines of hate, and it is these teachings which have brought the world to the pass in which it stands today. When we say that unrest in the world is the result of the War, we make a mistake. The War may have accentuated the unrest, but the unrest in the world today is caused by the doctrine of hate taught to the workingman by Karl Marx."

The people all over the world are asking, 'What shall we do to be saved,' not to be saved from everlasting punishment when death comes, but to be saved from the misery and suffering which is attendant upon the unrestrained selfishness, the breaking of contracts and the lack of sense of mutual obligation with which the world seems at present to be cursed. There seems to be but one answer, which is that the world can only be saved through the teachings of Jesus Christ. But in the place of teaching the simple philosophy of life which Christ taught, we are being taught all kinds of dogmatic doctrines and hair-splitting theories and sloppy sentimentalism that are as far from the teachings of Jesus Christ as the North Pole is from the South."

It is a significant fact that while Mr. Wiley is a hard-headed, successful business man and not a religionist, in the strict sense of the term, he is yet firmly convinced that only through the application of Christ's teachings can there come social and industrial stability. Notwithstanding the wide prevalence of Marxian socialism among the 2000 miners he employed when in full operation before the strike, so that many of these men and their children were never seen at church or Sunday school, because if they were they would lose caste with the union, Mr. Wiley established and teaches a men's Bible class, and does it in the firm conviction that only through the inculcations of Christ's principles is there hope for salvation even from an earthly hell.

## A GREAT BANKER'S VIEWS ON THE PROHIBITION QUESTION.

The Waukesha National Bank,

Waukesha, Wis., July 17, 1922.

*Editor Manufacturers Record:*

Mrs. Frame has read your "Prohibition Question," and pronounces it the best proposition extant on that subject.

I enclose check herein for \$2.50, for which please send me five copies, which I want to put in the library and also in our college here as I think it would do much good.

ANDREW J. FRAME.

This letter from one of the most highly esteemed national bank men in America shows how the women are working for Prohibition and how through Mrs. Frame's commendation, he is distributing "The Prohibition Question" to schools and libraries. Would that every business man in America would have his family study "The Prohibition Question" and follow Mr. Frame's example.

## THE LITERARY DIGEST POLL ON THE PROHIBITION QUESTION.

**R**EGARDLESS of the final outcome as to whether the poll by the Literary Digest is for or against Prohibition, or for or against a bonus for soldiers, the poll is valueless except that it helps advertise the Literary Digest. It cannot possibly be conclusive in any sense. Under date of July 17 the editor of the MANUFACTURERS RECORD wrote to the Literary Digest as follows:

Editor Literary Digest:

New York, N. Y.

In connection with the vote which you are now taking on the Prohibition question, I would be glad to have any information that you can give me on the following points:

To what extent is this poll being taken of women?—for I believe a very large proportion of the women of the country are in favor of Prohibition. Unless they are included in the poll the final result of your count will hardly be correct, regardless of whether it is for or against Prohibition.

To what extent are you reaching in this canvass the farmers and their wives?—for the farm people of the country are the ones who will largely settle questions of this character in the final vote of the country.

In the small towns and farm districts Prohibition has made greater progress than in the larger cities, where vice is rampant and where the criminal element of the bootleggers finds its best field for activity. Unless you are reaching this population of the small towns, women of all classes, city and country alike, and the farmers, you will hardly get a fair representation of the element which will do much of the voting on all questions of this character.

Any information that you can give me on this matter will be greatly appreciated.

RICHARD H. EDMONDS,

Editor.

To this inquiry no reply has been made, but possibly the questions raised will be answered through the Digest. It is not possible for a vote of this kind to be conclusive in any sense whatever, and in this particular case it is self-evident the Literary Digest has not reached the women of the country, who have equal power in voting with the men, nor have they reached to any large extent the people in the country districts, farmers and others, as well as millions in the lower walks of life who have a very vital interest at stake in Prohibition. Moreover, under the aggressive and untiring propaganda which the liquor interests are conducting, every opponent of Prohibition will vote promptly and do all in his power to see that every other man who receives a ballot from the Digest votes in the same way, whereas the Prohibition forces are not as alert and alive to the situation as are the whisky people.

The MANUFACTURERS RECORD is in receipt of a copy of a letter sent from Jefferson City, Mo., to the editor of the Literary Digest, in the course of which it is said:

"Out where the West begins' a friend of mine refused to mark the ballot you sent him and threw it in the waste basket because he thought your action un-American as about all the States and Congress too had decided the Eighteenth Amendment and did not ask you about it before they did it. \* \* \*

"The greatest failure the Eighteenth Amendment has had to contend with is the wet politicians in office who were in office when Prohibition went over the top. \* \* \*

"The following paragraph is about a man who was well known in Berlin but who lived in—(a city in America.)

"A man died a few years ago who grew rich selling an article that was banned in half of the cities and countries of his native land, that was sold in every house of ill-fame in the land, that is the maker of tramps and harlots, that sends men who sell it to jail, and those who use it to the devil, that is forced against the law into thousands of communities, making every dealer a law-breaker. The man who died could not have died rich except for law-breakers and criminals who were his salesmen and gathered pennies through crimes for his riches. Millions of heartbroken women, millions of wrecked lives of men and women and thousands of crippled and de-

linquent children are the results of his journey through this bewildering world. If his work could have died with him, how sorry the devil would have been to have heard of his death."

The writer of the letter from which we have quoted briefly is Mr. E. A. Hackett of Jefferson City, Mo., who in sending to the MANUFACTURERS RECORD a copy of his letter to the Literary Digest, among other things said:

"I have asked scores of reputable citizens over twenty-one and less than half a dozen have said that they have received a straw ballot. Last Sabbath just before Sunday School I asked a few classes of women and two only said they had received the ballot. One has four grown children, another woman said that her husband had received one but only voted for himself. The pastor said that he had received two ballots, one for himself and one for the church which is indicative of the limited circulation of these ballots among people who have a right to vote on questions of this kind."

We do not charge the Literary Digest with any intention to mislead the public but we do say that its straw vote, regardless of how it goes on the Prohibition or the bonus question, is of no particular value and cannot possibly settle a great moral issue. Moreover, the states and the courts have ratified the law as passed, and this revolution will never move backward unless civilization dies.

## NO SUBSIDIES TO LAW VIOLATING SHIPS.

The MANUFACTURERS RECORD, commenting vigorously upon the law-breaking by the shipping board, declares: "President Harding's appeal for a ship subsidy bill must first be backed by President Harding's repudiation of the law-breaking by the shipping board." Unquestionably, even those who want a ship subsidy, if there be any, will not want to see the Government taxes raised to support floating bars in defiance and violation of the nation's solemn laws.—Kinston, (N. C.) Free Press.

There are millions of people who want a ship subsidy but they want honor and honesty and integrity in the Government to a still greater extent. And so long as the Government violates its own honor and breaks its own laws on the devil's plea that it is necessary to do so in order to make money, so long as the Government turns its ships into saloons in open defiance of its own laws, so long will all patriotic, honest, law-abiding people say that better no ships than ships secured by such methods.

## SEEKING TO ENLIGHTEN ENGLAND AS TO AMERICAN PROHIBITION.

NELSON E. FUNK,  
Consulting Engineer,  
150 Nassau Street,

New York, July 19, 1922.

*Editor Manufacturers Record:*

Enclosed find check for \$2.00 to pay for the copy of "The Prohibition Question" you sent me and for three more copies which I wish to send to some of my friends in England.

NELSON E. FUNK.

## Michigan Manufacturers Favor Firm Stand.

[Telegram to Manufacturers Record.]

Detroit, Mich., July 28.

*Editor Manufacturers Record:*

Have delayed answering your telegram of last week until a comprehensive review of the situation in Michigan could be made. Factories have about sixty days supply of coal. Inability of railroads to move coal, raw material and finished products is beginning seriously to affect business. Rapid closing down is expected within next two weeks. Feeling here is that railroads' attitude on seniority should be supported, strikers should be penalized for defying Government order. President's plan on seniority seems to have delayed settlement.

A. B. WILLIAMS,  
President Michigan Manufacturers Association.

August 3, 1922.

## Currency Based on Stored Commodities—A Plan in Active Operation, Antedating Edison's Suggestions.

[Mr. Thomas A. Edison presented through the Manufacturers Record last week a statement of his plan for the issuance of currency based on warehoused commodities, and in an editorial reference to his article we stated that a remarkable confirmation of the feasibility of his plan, at least so far as cotton is concerned, would be published this week. That confirmation is found in the following statement by Mr. Charles F. Wood, Vice-President of the Warrant Export and Discount Corporation of Birmingham, Ala., showing that what Mr. Edison proposes has been actually accomplished by the Warrant Warehouse Company in issuing an interest-bearing note which in the panic of 1914 took the place of currency and passed at its face value in all parts of the country. Mr. Edison probably never heard of the operations of this company, but it is an extremely interesting fact that this company has successfully demonstrated practically everything that Mr. Edison suggested in his currency based on warehouse products, on a scale sufficiently large to demonstrate its feasibility so far as cotton at least is concerned.]

We command to our readers the following extremely interesting statements by Mr. Wood:—Editor Manufacturers Record.]

By CHARLES FRANCIS WOOD, Vice-President, Warrant Export & Discount Corporation, Birmingham, Ala.

The press of the country is giving a large amount of discussion and publicity to the ideas of Mr. Thomas A. Edison, published in full in the MANUFACTURERS RECORD last week, relating to the issuance of a currency based upon stored commodities, and as a contribution to these discussions the outlines of a plan heretofore carried out in an experimental way by the Warrant Warehouse Company of Birmingham and Mobile may be of interest as indicating the practicability of the ideas being advanced by these able men.

Twice during a period of stress and panic, the Warrant Warehouse Company has issued its interest bearing notes payable to bearer in the form of currency which notes have passed from hand to hand and been used for the purpose and in the place of bank notes.

In the panic of 1907, and again in 1914 and the "Buy a Bale of Cotton" movement, that company stored in its warehouses a considerable amount of cotton, and issued against this cotton notes in the form shown by a photographic reproduction of one of them. The notes were issued in denominations of five and ten dollars, and three ten-dollar notes, or six five-dollar notes were issued against each bale of cotton in storage.

These notes were redeemable on or before one year from date and bore seven per cent interest. They were practically of the same size and shape as bank notes and passed from hand to hand as currency. The largest amount outstanding at any one time was about \$27,000.

Nearly all of the notes were redeemed within the year fixed for maturity; a few of them however, were outstanding for a longer period, and nearly two years elapsed before the last one was redeemed and cancelled. All were returned,

redeemed and cancelled and not a single one was lost. They passed current over a large part of the country and returned to the company through various banks; some of them even came from Los Angeles where they had been deposited by the Wrigley Chewing Gum Company, that company having received them in payment for goods sold to country merchants in Alabama. Some of the notes came back from New York, where country merchants had paid jewelry bills to manufacturing jewelers on Maiden Lane.

The experiment, although tried only on a very modest scale, was considered a success, and did much to relieve a very serious situation in Birmingham and vicinity at a time when currency was almost impossible to secure.

By a coincidence, the fundamentals of this experiment are almost identical with the details outlined in Mr. Edison's plan for the issuance of currency based upon stored commodities in that: (a) the warehouses used were fireproof, built of concrete, modern in construction and almost new. The insurance rate on these structures and contents was and still is the lowest in the south; (b) the cotton was insured for twenty-five per cent above the amount loaned; (c) the limit named for the redemption of the currency was not more than one year; (d) the amount loaned against the cotton was practically fifty per cent of its market value over a long period of time. In these particulars, the plan was almost "on all fours" with what Mr. Edison is now advocating, and many of the results which Mr. Edison claimed would follow the operations of his plan did follow the experiment made by the Warrant Warehouse Company.

From time to time consideration has been given to making a wider application of the plan but it has always been felt



FORM OF NOTE ISSUED BY THE WARRANT WAREHOUSE COMPANY.

that if it was to be expanded in volume commensurate with the needs of commerce it would have to be done under the direction and supervision of government agencies.

More recently through an associate company, known as the Warrant Export & Discount Corporation, created by the officials of the Warrant Warehouse Company, the warehouse company has assisted in exporting a large quantity of cotton to Europe and there having the same manufactured for account of the farmer-owner who produced the cotton, under what has become known as the "cooperative toll plan."

In connection with and as a part of the export business, the discount corporation has been making loans to the farmer-owner of cotton averaging about sixty per cent of the spot market. The amount varies with the grade of the cotton and is available to the owner as soon as the cotton reaches the warehouse or is put under a bill of lading. The notes of the farmer-owner with a maturity up to one year, secured by the cotton as collateral, are taken and held as a lien against the finished goods up to the amount advanced.

By another coincidence, another of the ideas of Mr. Edison has been put into effect in that the company issues to the owners of the cotton, an "equity certificate" which certificate on its face shows the market value of the cotton at the American port; its values in the foreign market; the probable value of the cotton in finished goods; the amount of

the lien held by the corporation against the proceeds of the manufactured cloth, and the amount of the probable equity the owner will have at the completion of the transaction. This "equity certificate" is by its terms a negotiable instrument and carries on its back the right of assignment by endorsement, so that the owner of the cotton can, exactly in the manner proposed by Mr. Edison sell his equity at any time and the holder of the certificate can secure reimbursement under the original contract of the cotton producer, after paying off the loan and cancelling the notes.

The plan was an instant success for it met a vital need of a great many people throughout the cotton growing states from the Carolinas to California, bringing relief to hundreds at a time when the cotton could not be sold or money borrowed against it. During the few months of the corporations' operations, there have been many separate transactions of only one bale each and others running all the way up to about 1000 bales each.

Special contracts were negotiated with efficient and responsible mills, the passage of special laws was secured in several countries of Central Europe, under which laws the title to the cotton is by the Government guaranteed to the American owner and it is permitted to enter these countries free of import duty to be taken away without export duty, and in event of financial difficulties in any of the mills to whom it is loaned, it is provided that the bankruptcy laws

*A condensed form of the paper issued on cotton to be exported with a division of profit to the cotton grower.*

Samuel C. Dobbs,  
President.

Charles F. Wood,  
Vice-President.

William D. Nesbitt,  
Secretary-Treasurer.

**WARRANT EXPORT & DISCOUNT CORPORATION**  
1603-8 American Trust Building  
Birmingham, Ala.

**Exporters and Manufacturers of Cotton Under the "Co-operative Toll Plan"**  
Cable Address: "WEDCO" (Codes: Western Union, Bentley's Meyers 39th Edition, Shepperson's '81)

**STATEMENT OF EQUITY**

No. 1001

Date.....

We hereby certify that.....  
of .....hereinafter called "Owner,"  
has delivered to the Warrant Export & Discount Corporation, hereinafter called "Warrant,".....  
Bales of Cotton, American weight,.....pounds.  
Bales Grade Staple

The approximate value of this Cotton at today's New Orleans market quotations is.....\$.....  
Against this Cotton "Warrant" has loaned and has a first lien for.....\$.....  
Leaving to the "Owner" an Equity of.....\$.....

Of the amount loaned.....\$.....  
is held by "Warrant" as a fund from which to pay expenses of handling, forwarding, insurance, etc., which costs as they are expended give additional value to the cotton as it moves to and through the manufacturing processes for its final liquidation by sales of the yarn or cloth, and this amount properly should be added to the "Estimated Equity," making same.....\$.....

While final out-turn on this cotton is dependent upon prices secured for the yarns and for cloths produced from it, past experience indicates that after paying costs and commissions there should remain for the "Owner" an added value above that of the raw cotton of a minimum of 6c. per pound for upland cottons and larger amounts for longer staples. In arriving at final liquidated equity this possible minimum profit may be considered, adding to this lot a possible additional equity of.....\$..... and making a total estimated potential equity of.....\$.....

This memorandum of values is an estimate only and is issued as information to our customers. Fluctuations in the prices of cotton cloth and yarns vary these figures as to value. The value is not, and cannot be guaranteed by "Warrant."

The above cotton is covered by our Trust and Participation Certificate No. ...., dated ...., Subject to the conditions of said certificate the equity in this cotton may be assigned by proper endorsement on the back hereof, and when same is filed with "Warrant" and recorded by it, "Warrant" will undertake to account to assignee in all respects as to the owner.

**WARRANT EXPORT & DISCOUNT CORPORATION.**  
By.....

Treasurer.

For value received I hereby sell, assign, transfer and convey all my right, title and interest in and to the equity in the said cotton to.....  
of .....and the Warrant Export & Discount Corporation is hereby authorized to pay to said.....all funds due, or that may hereafter become due, to me from the handling by "Warrant" of the said described cotton.

TriPLICATE copy of Trust and Participation Certificate No. .... is hereto attached.

Owner.

Witness ..... Date.....

of the country shall not apply to the cotton and the creditors of the mills shall not have an interest in it.

Insurance is carried against fire and marine loss, war risks and confiscation by foreign powers en route.

The fullest Governmental co-operation has been developed and the guaranty of some of the strongest banking institutions make its safety absolute.

No effort has so far been made to expand the plan on an enormous scale, but in a safe, steady and conservative way the details have been worked out, and one by one tried out to determine whether or not it was possible for the Southern farmer to produce cotton and get a share of the benefits which come to the world through his efforts. More than two years of work and many thousands of dollars were spent in perfecting these details before a bale of cotton was shipped.

Recent cables indicate the sale of yarns made from one of the first lots shipped averaging about low middling in grade of which about 60 per cent was stained and tinged, at a price to net the farmer from 25 cents to 30 cents per pound after paying all expenses, for which when it was shipped, the market quotations was about 12 cents.

The "toll plan" has been approved by bankers, large and small, from some of the officials of the Federal Reserve banks down. Under the plan, farmers who produce cotton have for the first time an opportunity to share in the profits of the manufacture thereof.

In the disturbed state of foreign business and exchange, and the lack of parity in the currencies of the world, this effort to do some business, even though in a comparatively small way, is felt to hold out real promise for a long time to come, and has made possible the carrying on of operations which had practically ceased to flow through normal channels.

Whether or not the business in its present form will be permanent is not yet determined, but inasmuch as there can be no parity in foreign exchanges without a near equality of values, and as the creation of value and wealth is a slow process, it is thought that somewhere from five to twenty-five years may elapse before there will be such stability of exchange as to permit the former normal flow of commerce. Meantime it is anticipated that some evolution of the plan will have taken place and its development will point the way to a possibly better method than has heretofore ruled in handling our export cotton.

At the moment, American export business is very much like a marble game in which there are a lot of boys around the ring all eager and ready to play, but the game is at a standstill because one boy has won all the marbles. The American people have won a large part of the wealth of the world, while most other peoples are bankrupt, so unless we can find some way to safely loan our former customers some of our commodities, there will be no foreign trade just as there can be no continuation of the marble game unless the boy who has all the marbles shall loan his fellows a glass alley and a couple of meigs."

### Federated Engineers Appeal to President to Protect Patents Sold to America.

A resolution has been adopted by the Federated American Engineering Societies appealing to President Harding to protect patents sold to America. It was prepared by the Committee on Procedure of the Federation at its meeting in New York on July 14, and of which Calvert Townley, Vice President of the Westinghouse Company is chairman.

It says in part that the patents formerly owned by German and her allies, and, through the Alien Property Custodian, ordered returned from the Chemical Foundation "have become the nucleus of our American synthetic organic chemical industry, which must be encouraged for the sake of scientific research, public welfare and national defence."

"The Federated American Engineering Societies, through

its Committee on Procedure" the resolution continues, "expresses the hope that no action will be taken without hearing representatives of chemists, chemical engineers, chemical manufacturers, the medical profession and others most directly concerned and implores that nothing be done which can, in any way or to the slightest extent, tend toward the ultimate return to former owners, of patents or other property, lawfully sequestered and sold to Americans.

"It is of importance to note that the Federated American Engineering Societies speaks concerning national problems for thirty-odd national state and local engineering societies. The Federation, therefore, speaks for some 55,000 engineers.

### Activity in Southern Building and Industry.

Industrial, building and general developmental activities in the South and Southwest for the first seven months of this year show a total of 34,625 items as published from week to week in the construction news columns of the MANUFACTURERS RECORD. For the four weeks of July, the total is 4474; this compares with 3356 items for July 1921. For the first seven months of last year, that is, from January to July inclusive, the total is 28,080.

Herewith detailed figures for the various classifications for July and for the first seven months of 1922:

	Total for July	Total Jan. to July
<b>Industrial Developments:</b>		
Airplanes, Stations, etc.....	1	14
Bridges, Culverts, Viaducts, etc.....	167	1,028
Canning and Packing Plants.....	25	164
Clayworking Plants.....	13	76
Coal Mines and Coke Ovens.....	32	259
Concrete and Cement Plants.....	9	40
Cotton Compresses and Gins.....	13	92
Cottonseed Oil Mills.....	8	24
Drainage Systems.....	13	122
Electric Plants.....	71	650
Fertilizer Plants.....	10	39
Flour, Feed and Meal Mills.....	17	135
Foundry and Machine Plants.....	15	173
Gas and Oil Enterprises.....	74	638
Hydro-Electric Plants.....	7	63
Ice and Cold Storage Plants.....	32	349
Iron and Steel Plants.....	0	19
Irrigation Systems.....	1	13
Land Developments.....	93	505
Lumber Manufacturing.....	38	265
Metal-Working Plants.....	31	202
Mining.....	25	162
Miscellaneous Construction.....	41	360
Miscellaneous Enterprises.....	145	1,170
Miscellaneous Factories.....	152	1,297
Motor Cars, Garages, Tires, Etc.....	124	842
Railways.....	7	96
Railway Shops, Terminals, Roundhouses, Etc.....	6	22
Road and Street Construction.....	618	4,116
Sewer Construction.....	94	759
Shipbuilding Plants.....	3	16
Street Railways.....	2	11
Telephone Systems.....	13	144
Textile Mills.....	31	236
Water Works.....	94	883
Woodworking Plants.....	33	305
	2,058	15,379
<b>Buildings:</b>		
Apartment Houses.....	109	652
Association and Fraternal.....	29	286
Bank and Office.....	50	478
Churches.....	101	850
City and County.....	27	282
Courthouses.....	13	97
Dwellings.....	258	1,964
Government and State.....	7	82
Hospitals, Sanitariums, etc.....	45	201
Hotels.....	37	287
Miscellaneous.....	32	322
Railway Stations, Sheds, etc.....	13	77
Schools.....	297	2,194
Stores.....	146	1,036
Theaters.....	17	121
Warehouses.....	34	248
	1,215	9,267
<b>Financial:</b>		
Corporations.....	79	592
New Securities.....	333	3,180
	412	3,772
<b>Machinery Wanted:</b>		
Machinery, Proposals and Supplies Wanted..	684	5,234
Totals .....	4,369	33,052
Fire Damage .....	105	973
	4,474	34,625

## From Maryland to Texas and Back.

A BIRD'S EYE VIEW OF BUSINESS CONDITIONS WHICH MARK THE COMING OF THE SOUTH'S GREATEST ERA OF PROGRESS—SIGNIFICANT MOVEMENT OF TEXTILE INDUSTRY SOUTH—ABUNDANCE OF HYDRO-ELECTRIC POWER ONE OF FACTORS THAT WILL MAKE OF SOUTH THE WORLD'S GREATEST COTTON MANUFACTURING CENTER.

[After a three months' "swing around the circle" from Maryland to Texas and up through the states of the Southwest and central South, Mr. Albert Phenis, of the Manufacturers Record staff gives his impressions of the revival of business now in evidence throughout the South.—Editor Manufacturers Record.]

BY ALBERT PHENIS

Tremendous construction activity all down the line—hundreds, even thousands of millions for good roads and bridges; state, county and municipal buildings; churches, hospitals, residences, factories and warehouses, and for fraternal buildings—these are the visible evidences of a change in conditions and public sentiment which I found all over the South in a three months' trip, which has taken me into every Southern state except two. If abounding prosperity throughout the length and breadth of the land cannot be claimed, at least it is true that the wheels are moving, that in place of the pall of gloom which covered the South and the country for so many months, there is buoyancy and courage and action—and there is wholly absent the former haunting fear, so ever present, that unknown and even greater perils lay in waiting, to be unleashed upon the country by the blundering policy or worse of those who tightly held the credit strings of the nation's business.

Easier money—a plentitude of money, in fact—at lower rates of interest, bringing better prices for grain, for cotton, for live stock and for manufactured articles, for lumber, for iron and steel—all these conditions are reflected in an activity greater than any known in years, and mark an "about face and forward march" that promises an onward move toward the most universal and widespread era of development the South has ever known.

When I left Baltimore the middle of March, the turn in the tide was not universally recognized, and by many was not conceded at all. Even now there is failure to get in step by elements in the South and elsewhere. Many of the country merchants, hit hard by the previous plight of the farmers, and reluctant or unable to make a clean job of it in marking down their inventories and getting rid of their old stocks to make room for the new goods for which there is an unsatisfied demand, are hesitant and unconvinced of the stability of the manifest change. However, the records speak too eloquently to be denied, and no one who makes the rounds of the states now fails to proclaim the certainty of the improvement in conditions and spirit that is found on every hand.

The attitude of the labor unions on the railroads and in the coal mines, the hard bearing down on enterprise which remains from drastic deflation following the war, these and other untoward circumstances lessen the resiliency and circumscribe the rebound which business would otherwise show, but the American man of business—vigorous, resourceful and with marvelous adaptability to the conditions that must be met—has simply made up his mind to go ahead, and go he will—and going he is.

The psychology controlling the farmer is also to be considered. When in the spring he turns the soil and the green buds burst on the trees, his mind becomes fixed on the crop he is going to make, and he ceases to think of the failure or disaster of the year before. He is expectant and hopeful, not introspective and depressed. And so with things half-way breaking even in crop prospects and in prices, the buoyancy carries through the season, and when, as is happening now, the yield is more than fair in grain and grass and immense in fruits, watermelons and other cash producing

crops, almost everywhere, and the price permits a profit, the buying power of the farmer begins to take on life, and always this is almost the deciding factor as to whether times shall be good or bad. (The commercial watermelon crop alone of the South is this year officially reported as 60,102 carloads.)

From many sources I have heard that the farmer has been living at home as never before—that he has diversified, that by barter he has, in many instances, gone through the year without handling any money, and that, to an extent never before known, he has raised this year's crop without borrowing money from the bank. If this is at all general, the evident result will be widespread liquidation, with consequent ease in conditions among country merchants and banks, and with anything like an even break as to yield and prices next year, prosperity in the South should then be universal and rampant.

In some sections of the South there is apprehension as to the ravages the boll weevil may cause. The greatest fear seems to be in the sections most recently infested—the northeastern states in the belt. While prophecies are now altogether premature, it would appear from present indications not a bad guess that the yield will not be so great as to depress the price, while the total production will exceed last year's, with Texas leading with somewhere around 3,500,000 bales.

The first evidences of great activity and optimism I found after leaving Baltimore were revealed in the account given me in Raleigh by Highway Commissioner Frank Page, of the results of inaugurating a \$50,000,000 good roads campaign in North Carolina. The mere passage of the Act in March, 1921, seemed to change the spirit of the people of the state, so that they went to work with a vim that "accomplished more in one year than had been done in any one of ten," said Mr. Page to me. And now, with the expenditure of \$2,000,000 a month for the work, this money, trickling down through all the channels of the various communities, has helped to turn the tide of material prosperity for all the state.

In organization and administration the North Carolina Highway department is in the front rank of states, north or south, and when the present program is completed, well within five years, there will be a system of good roads connecting up every county seat with local or district roads, highways meeting other highways at the state line.

In all the states of the South there is activity in good roads construction—in some much greater than in others, but even the laggards are awakening to the necessity for matching the good roads development of adjoining states. Georgia has an excellent organization, and an extensive program, involving an expenditure of \$75,000,000 within five years, is now being urged, while Alabama is now selling bonds to carry out a \$25,000,000 program. Mississippi, while not so aggressive, is spending several million dollars in road improvements, and Louisiana is making progress on a comprehensive and long established plan that will provide, when completed, a network of roads covering the entire state.

Texas is at work on a \$50,000,000 program, which will well round out the comprehensive plan of good roads on which the state began work early in the movement for improved high-

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ways. Over \$40,000,000 is involved in projects now under completion and for work in process of letting.

Arkansas has a good roads program that will give every county seat connection with the next one, and will provide state roads to a connection with all national highways that touch the state lines. This program is 60 per cent completed now, and will be 80 per cent completed by the end of 1922. The work has proceeded in an orderly and systematic manner, and as I shall point out in a more elaborate discussion of the matter later on, Arkansas has lifted itself out of the mud by an effort and expenditure of money deserving of highest commendation. It is somewhat difficult to fathom the motives for denunciation such as Arkansas has received on account of its good roads activities, but politics seems to have had a lot to do with it.

Oklahoma is at work on a program that provides for the expenditure of some \$12,000,000 on good roads in 1922.

Tennessee recognizes the need of a more comprehensive system of good roads than now exist, and at the next session of the legislature a bill will be introduced providing for submission to the voters of a proposition to expend \$50,000,000 or \$75,000,000 for additional good roads.

Missouri is working on plans that contemplate the expenditure of some \$90,000,000, including Federal aid, during the next ten years.

West Virginia has started on a new program of good roads building, with a \$50,000,000 bond issue authorized by the state.

Building operations are of a magnitude hardly less conspicuous than good roads construction. There are all kinds of buildings going up and in contemplation in every part of the South, the activity, as shown by figures to date for the whole United States, being several times as great in the South, according to percentage of increase, as in other portions of the country. There is building by states, municipalities, societies, corporations and individuals. Churches, schools and hospitals are almost if not quite the leaders in the list, for the South is deeply religious, now as always, and mindful of things spiritual, educational and humanitarian, and in many places contributions for these purposes have been freely made from the new wealth which has come through oil, lumber and other developments.

The list of important building operations would fill a volume, and cannot be given in detail. Touching only a spot here and there, it may be mentioned that in Raleigh I was told of a \$7,000,000 building program for public buildings, residences, etc., then under way for the city and its vicinity; Charlotte was in the midst of a great building activity; Atlanta and Birmingham were far ahead of previous records in amount and character of building under contract and in contemplation; New Orleans was full of building activity, with numerous important structures in hand or under negotiation; the Texas cities are put to it to supply the demand for offices, business houses and residences; Little Rock and Fort Smith are busy with building, and some of the new undertakings are notable, such as the \$2,500,000 addition to the Albert Pike Consistory at Little Rock; Oklahoma's cities are building all the time; Kansas City is constantly building to meet the requirements of an ever growing commercial metropolis and industrial center; St. Louis is hustling with an \$18,000,000 building program, so much so that contractors are bidding against each other for workmen; Memphis has in sight \$13,000,000 of new construction; Chattanooga is building new industrial plants and many fine residences; and so it goes, the fact being that even in the smaller towns as in the larger cities, all through the South, new buildings, largely of the better type, for residence, business and public use, are found under way, going hand in hand with street and road im-

provements and the introduction of greater refinements, comforts and conveniences in social and business life.

Of vast significance is the situation in the cotton mill industry. In March I found that already the mills in the Piedmont section were running night shifts, and as indicating the recovery then beginning I was told in Charlotte that greatly increased sales of merchandise over last spring's sales had been made to customers in Mississippi, which had been one of the hard hit states of the South, and that in several instances the purchasers had discounted their bills for cash. The Southern Power Company reported that although then at work on new power stations and transmission lines, they were two years behind the demand for power for industries, largely textile plants, new and those desirous of enlarging their capacity, and on top of the statistics indicating the much greater extent to which spindles and looms have increased in the South, as compared with New England, there now come the distinct declarations of men identified with the industry in New England that the South offers irresistably greater inducements for new mills than can possibly be offered or created in New England. From the statement made by Robert Amory, president of the National Association of Cotton Manufacturers, that in the opinion of many well posted mill men, it is folly to enlarge Massachusetts cotton mills, and that the industry is gradually slipping away from New England to the South, and in view of such facts as the recent announcement of the proposed transfer by the Jenckes Spinning Company of cotton mill machinery from Pawtucket, R. I., to Gastonia, N. C., where the construction of a large mill is under way, to be equipped with 40,000 spindles recently in operation in Pawtucket, which instance is merely typical of what is going on, it is manifest that a new era is at hand, that a movement is under way, long foreseen by keen visioned students of Southern possibilities and conditions, which will in time make of the South the world's greatest cotton manufacturing center.

The particular and controlling factor at this time in widely turning the thought of New England toward the South seems to be the economic impossibility of meeting the wage and hour demands of the New England textile workers, many of whom are now out on strike. The Anglo-Saxon labor of the South, which is willing to give a fair day's work for a fair day's wage, in contrast with the practices and exactions of the present-day foreign workers in the New England mills, gives advantage to the Southern mills which is declared to be more and more difficult to overcome, and with increasing skill in management and workmanship South the previous advantage once held of experience and skill in the Northern mills is rapidly waning.

The great recent growth of the textile industry in the South, however, has been largely due to the hydro-electric development which the past ten or fifteen years has witnessed. Just as water power was the foundation of the textile industry in New England, so the harnessing of Southern streams by modern methods and the inauguration of transmission lines to deliver the power at the door of every industry, has tremendously stimulated the expansion of the textile industry South. Although so incompletely developed as yet are the streams of the South that a great gathering of engineers, water power officials, financiers and others was recently assembled at Asheville, to ask for government, state and individual aid in a coordinated effort to survey all of the water power possibilities of the Southern Appalachian States, so that accurate information as to just what may yet be done in water power development can be assembled, nevertheless the important factor of the present hydro-electric power of the South is demonstrated by the fact that of the 15,653,440 cotton spindles in the South 14,343,308 are in the states where hydro-electric power has been most extensively developed—Alabama, Georgia, North and South Carolina and Tennessee.

In North and South Carolina and Georgia, largely in the Piedmont section, where nearly every mill utilizes water-power, there were 12,642,762 of the South's entire 15,653,440 spindles, according to the Government census figures of 1921.

Hundreds of millions of dollars have been expended on the hydro-electric development of the South Appalachian States, and additional millions are constantly being added for expansions. At the Asheville meeting it was declared by W. S. Lee, vice-president and general manager of the Southern Power Company, that for every dollar spent by the power companies eight dollars were expended in buildings, machinery, equipment, etc., by the users of the power. So important a factor in development work have the power companies become, and so great has the skill and ability in their management grown, that Col. Frank H. Fries, a leading banker of North Carolina, stated at the Asheville meeting that securities of water power companies were now in high favor with conservative bankers as an investment.

It is not known how greatly the present development of water powers may be expanded in the Southern Appalachian States, the center of the South's cotton industry today. Such statistics as are available give the total development for Alabama, Georgia, North and South Carolina and Tennessee as 1,661,000 horse power, with undeveloped potentialities of 4,413,000 additional for the same states. That this is an extremely conservative estimate, investigators usually agree. With the general use of storage reservoirs, such as the Southern Power Co. has established at Bridgewater, at the head waters of the Catawba River, the primary power could be enormously increased, so much so that instead of 1,000,000 additional horse power for North Carolina, as given in the estimate above referred to, Mr. Lee, at Asheville, declared that a more accurate figure for North Carolina would be 2,000,000 horse power.

The significance of these figures becomes the more apparent when it is remembered that the total developed water power of New England is only 1,381,000 horse power.

While conditions justify the view that the South Appalachian States, with their more numerous streams suitable for hydro-electric development, will remain the center of the cotton mill industry, yet a very considerable development in other states of the South is altogether feasible, and already in Arkansas, as an example, a company at Little Rock is undertaking the hydro-electric development of some 80,000 horse power, and cotton factories will be sought as the major users of this power. At the present time there are only 7800 spindles in operation in Arkansas, and yet Arkansas was the third state in cotton production in 1921.

With the increasing development of the textile industry South it is being realized more and more that the manufacture of cotton mill machinery is an industry that should also be built up. In many Southern cities conditions are ripening for the successful manufacture of almost any article required. Skilled managers and skilled workmen are found here and there in widely separated sections, each forming a nucleus and also furnishing a demonstration of the fact that, exactly as New England established and built up her industries, will and determination, courage and grit, are the chief essentials in the establishment of almost any industry.

In Fort Smith, Ark., attracted by the enormous gas field, there is a very successful scissors factory, one of the few in the country, and in the same city is a printing house that by specializing in this work a number of years, now prints all of the circus tickets used in this and some other countries; all the baseball and movie theatre tickets used in the country west of Pennsylvania, and also great quantities of numbered tickets used for other purposes in the United States and as far away as the Philippines.

With mills at Bogalusa, Orange, Moss Point and elsewhere, the manufacture of wrapping paper from pine has become a

well established and important southern industry. At Canton, N. C., the Champion Fibre Co. is making not only wrapping paper, but the finest kind of book and ledger paper, using native woods of several kinds for the various products; a factory at New Orleans is turning out a million dollars worth of building board annually with the otherwise useless bagasse as the raw material; a paper mill at New Iberia is making egg containers and such packing material out of rice straw, and doing it on a big scale, in an impressive new factory erected for the purpose.

At Sugar Land, near Houston, in Texas, there is a \$15,000,000 investment by interests of which W. T. Eldridge is the head. In a model village, wholly built around the industries Mr. Eldridge has developed, there is a sugar refinery, which works on Texas and West India raw sugars, with a daily production of 800,000 pounds of refined sugar. Here also is the home plant of the Seely mattress, which now has branch factories at Little Rock, Oklahoma City, Kansas City, St. Louis, St. Paul, Chicago, New York, Richmond, Va., Memphis, N. C., Atlanta and New Orleans.

As showing the adaptability of leaders in Southern industry, in the same way as has been demonstrated in New England, where, as an example, the Fall River Iron Works, under changing conditions, abandoned iron making altogether and went heavily into cotton manufacture, the Hanes and Carr cases in North Carolina are illuminative. P. H. Hanes had built up a great tobacco manufacturing business at Winston-Salem, when in late middle life he sold out to the American Tobacco Co., and started a knit underwear factory, which was a wholly new undertaking for him. The same indomitable determination, unflagging zeal and tireless industry which had served him in the tobacco business carried him to success in the new enterprise, and with the help of his sons, who are thoroughly imbued with the original Hanes spirit, there has been built up what is said to be the largest knit underwear business in the world. At Durham, Julian S. Carr sold the Durham Bull Tobacco factory to the trust, and he made investments in cotton factories. His son, J. S. Carr, Jr., going into knit goods and hosiery manufacture, demonstrated marvellous ability as a manager and financier, and before his untimely death last March had built up a hosiery plant which had the largest output of any similar concern in the world.

These are merely random references to activities to be found now all over the South, for there is hardly any community, large or small, where some unique, interesting or important industry may not be found, utilizing a local or a waste product in the manufacture of a useful article of commerce, and often doing it in a notably big way.

It may remain for St. Louis to start the really great machinery making industry of the South, if the foundation already laid is found to justify expectations. At Granite City, which though on the Illinois side of the Mississippi River, is part and parcel of the St. Louis development, there is the plant of the St. Louis Coke & Chemical Company. Only four years ago it was merely an idea in the head of an inventor named Roberts. It is now a \$10,000,000 investment in plant and ample acreage, with coke plant, blast furnaces, by-product chemical plants, railroad track and equipment, cranes, etc., and although starting operation on Jan. 1, 1921, the ledger balances are now in black.

By the Roberts process, the coal of southern Illinois, highly volatile and high in sulphur, is converted for the first time into metallurgical coke, and the coke it is claimed is made in much shorter time than by any other process. From the blast furnace, which gets its ores half and half from Missouri mines and from the Missabé range, hot metal is delivered to numerous steel and iron working industries located in the vicinity. Alex. H. Twombly, an eminent en-

gineer of New York, is president of the company, and has been actively in charge of its operations from the beginning. "We have here either a nucleus or nothing," said Mr. Twombly to me, "and we have gone far enough to demonstrate that 'nothing' is not the proper appellation."

In St. Louis it is believed that with the development of barge line service on the Upper Mississippi, so that the Northern ores may be brought still more cheaply, and with the lower river service fully established now, and giving low rates by water to the country south, including Texas gulf ports and South and Central America and Mexico, St. Louis should become a very great iron and steel manufacturing center, including not only the heavy shapes but the more refined products of machinery, tools, etc.

The great value of water transportation, river and ocean, is coming to be universally recognized all over the South. For the Mississippi-Warrior service, with its phenomenal record of successful operation from the beginning, there are municipally owned concrete wharves and terminals, with gantry equipment, etc. at St. Louis; Memphis is providing elaborate wharves, warehouses and terminal facilities, as are other river cities, to a greater or less extent, and in New Orleans the facilities already provided are to be enlarged. Not only has the service for down river freight been large and profitable to both shippers and carriers, but an extensive up river business, often to capacity, has been somewhat unexpectedly developed.

New Orleans has a large number of Shipping Board lines, successfully operating between that port and South American and Caribbean countries, as well as across the seas. To still greater develop the commerce of that port, and also to stimulate a great and diversified industrial development, New Orleans has elaborate plans in connection with its virtually completed industrial canal, upon which an expenditure of some \$20,000,000 has already been made. The dock board and engineers are cooperating on plans for the development of an inner harbor, which would include every desirable feature of the most modern harbors in the world, with some additions designed to give New Orleans preeminence.

Port development having been made possible to such an increased extent during recent years by means of the suction dredge, a number of new seaports have been opened up on the gulf coast of Texas. Port Arthur, which started with a 9 foot channel in the days of Arthur Stilwell's first development there, has built up a great oil refining industry, having one of the world's largest refineries, and is to have government aid in securing an additional 5 feet to the present 25 foot channel, to enable ocean going tankers of 100,000 barrel capacity to fully load at the docks. Beaumont, with its refineries and large rice and lumber industries, also gets the benefit of the 30 foot enlargement, as does Orange, the home of the extensive Lutcher & Moore Lumber Co. operations, and the center of an important and possibly much greater oil development. Lake Charles, La., being a rice and lumber shipping center, has voted \$2,750,000 to deepen and widen the intracoastal canal between Lake Charles and the Sabine River at Orange, so that it, too, will receive the benefit of a 30 foot channel to the sea.

Corpus Christi is another Texas city determinedly working to become a deep water port, and it has recently received governmental recognition to that end. And the time will come, as students of conditions and tendencies agree, when every port that can be created on the coast will be taxed to its utmost to provide facilities for the commerce which the great Southwest will produce as the development of the country proceeds.

Houston has profited enormously from the construction of her ship channel, not only in increased commerce, but through the establishment of industries along the waterway. New in-

dustries, mainly large oil refineries, representing an investment of \$35,000,000, according to the Chamber of Commerce statements, have been located along Houston's ship channel during the past five years. Oil wealth, by the way, is in evidence all over Texas, for none of the blight on general industry halted the development of the Texas oil fields, and the oil when produced was marketed, refined and shipped, to the upbuilding of cities, institutions and individual fortunes in a remarkable manner.

In Houston they told me that that city had not felt the depression as some other cities had. Oil undoubtedly acted as a shock-absorber. New Orleans made the same report as to its good condition, and cited that New Orleans money was then being loaned in New York. It was my remarkable experience to be told by almost every city I visited, from the beginning at Raleigh to the finish at Asheville, that other cities had suffered more from the depression than they. I came to regard this as a most encouraging manifestation—a demonstration of an altogether courageous and buoyant spirit, and concluded that if all of them felt that they were not so bad off, after all, the basis for a good run and jump into real activities had been rather firmly established.

Surveying the whole field, I believe the South is now on the verge of the greatest activity in every line that it has ever known, and I want to testify to the high character of the men who have the destinies of the South in charge. We who belong to the old veteran brigade of workers and well wishers for the South need have no apprehension as to how the work will be carried on when we are ready to step aside. I had not made an extensive trip through the South since the year of the War. While some of the old guard still remain, I found young men everywhere in positions of trust and authority, alert, quick thinking, quick acting, young men, and largely they were ex-service men. Trained to duty, they still "carry on," and theirs is the spirit that seems to animate the South of today.

#### \$2,000,000 Building Program at Wheeling.

Wheeling, W. Va., July 29—[Special]—The building program of this city calls for an expenditure of about \$2,000,000 within the next few months. Three new business buildings are to be completed in the near future at a cost of about \$350,000. The firm of Stone & Thomas is building a \$100,000 addition to its large department store. This will afford the firm 24,000 additional feet of floor space. The Quarters Saving & Trust Company is building an addition to its present building at the corner of Sixteenth and Market streets which will make it the equal in size of any of the larger bank buildings of Wheeling. The addition to the Fort Henry Club is to cost approximately \$200,000. Permits have been issued for approximately 400 new dwellings. There is a prospect that the building of homes will be on even a more extensive scale than the erection of business structures.

#### \$750,000 Apartment House to Be Built in Atlanta.

Atlanta, Ga., July 29—[Special]—Plans have been perfected for the erection of a 9-story apartment building at Pershing Point, the northern junction of Peachtree and West Peachtree streets, by Ernest D. Duncan, at a cost of something over \$750,000. G. L. Miller & Company of Atlanta, arranged the financial details, and the general contract has been awarded to Gude & Company of Atlanta. Construction is to begin August 1.

The new buildings will contain 100 apartments and will have a frontage of 100 feet on each of the two streets mentioned. Construction will be of brick, limestone and terra cotta. Each apartment will have hardwood floors with tile baths. The architects and engineers are G. Lloyd Preacher & Co., of Atlanta and Augusta.

# The Whole Coal Question Broadly Analyzed.

SECRETARY OF ILLINOIS MANUFACTURERS' ASSOCIATION PRESENTS FACTS SHOWING ECONOMIC NECESSITY FOR REDUCTION IN MINING COSTS—NO JUSTIFICATION FOR MINERS' STRIKE.

Chicago, July 26, 1922.

*Editor Manufacturers Record:*

Supplementing the telegraph message Mr. Hettler sent on Saturday, July 22, with reference to the coal strike and the railroad strike, and measures taken by the Illinois Manufacturers' Association in connection therewith, we take pleasure in giving you fuller details than could have been expressed by wire.

The association has a special railroad committee of which Mr. George R. Meyercord of the Meyercord Company, Chicago, is chairman, which has kept in close touch with the railroad situation and particularly with the United States Railroad Labor Board for the last two years. The association, through its special railroad committee, strongly maintained the justice of the carriers' position in favor of regional boards of adjustment rather than a national board of adjustment as demanded by employees.

This special railroad committee independently gathered data indicating the wages paid in Illinois manufacturing establishments for operations similar to those in railroad shops, including common labor, semi-skilled labor and skilled labor. This information was submitted to the United States Railroad Labor Board and indicated that wages paid in railroad shops materially exceeded wages paid in manufacturing establishments in the same industrial centers. One effect of this was to make it difficult for manufacturers to secure help. It developed after the United States Railroad Labor Board fixed the wages for shop employees that even with reductions that were made the railroad employees received more pay than they did in most manufacturing establishments. It was largely through the result of efforts of the Illinois Manufacturers' Association that private industries were given an opportunity to present their case to the United States Railroad Labor Board. The association has gone on record more than once by resolution and otherwise in opposition to railroad wages in excess of wages paid for similar operations in manufacturing establishments.

This special committee on railroads also directed its energies during 1921 toward securing a reduction in freight rates that would enable shipments to move freely and so stimulate factory operation and reduce unemployment. It was the understanding, however, that lower freight rates were to be brought about by reduced expenses in railroad operation, principally labor costs. There were several conferences between the special railroad committee and railroad executives in 1921.

The association has taken the position that the decision of the railroad labor board with reference to wages should be upheld by the Federal Administration and, as stated in our telegraph message to you, so wired President Harding on July 1.

As to the coal strike, a special coal committee of the Illinois Manufacturers' Association made an exhaustive survey of conditions in Illinois previous to the calling of the strike on April 1. We submit herewith a report of that special coal committee. We have taken the position that it is necessary to reduce the cost of fuel for manufacturing purposes and the only way to bring about that reduction is to cut down to a reasonable basis the war time wages insisted upon by the United Mine Workers of America.

After the massacre of nineteen non-union men at Herrin, Williamson County, Ill., the association wired Governor Small to use the full strength of the law in protecting miners of coal

against strikers. As a result of our circular sent out on June 22, hundreds of telegraph messages were sent to Governor Small and state troops were ordered to be in readiness in case of further trouble.

As stated in Mr. Hettler's telegraph message to you, we have wired Governor Small, asking for the calling of a special session of the legislature. The association also wrote letters to each member of the Illinois General Assembly on this subject.

Our special coal committee, headed by William Butterworth of Deere & Company, Moline, Ill., is in constant touch with the Illinois Coal Operators' Association and has taken the initiative in the only policy, as we see it, to bring about a resumption of coal mining in the state.

JOHN M. GLENN, Secretary.

## REPORT OF THE SPECIAL COAL COMMITTEE

Chicago, March 21, 1922.

For several weeks a special coal committee of the Illinois Manufacturers' Association has been investigating the coal situation with a view of securing reduced prices for bituminous coal for Illinois consumers.

The coal operators recognize that fuel prices are too high and express a determination to undertake to establish reductions as soon as mine operating costs are reduced.

In order to definitely ascertain the advance in coal prices a questionnaire was sent to members of the Association, asking what they were paying for coal now compared with 1914 prices. This questionnaire also requested details of freight rate advances and storage facilities.

Replies were received from nearly 400 consumers with an approximate annual consumption of 12,000,000 tons of soft coal. It should be stated that many manufacturing concerns buy electric power from public service corporations, or have their power furnished them by landlords of buildings or lofts.

### Coal Has Advanced 105%

The average increase in the cost of coal for these consumers at the mine at the present time is 105% over the prices that prevailed in 1914. The percentage of increases varied greatly. In some instances it is as low as 30%. In other instances it ranges between 300 and 400 per cent. The large increases are not confined to smaller establishments; many large concerns report a considerable increase in the cost of their fuel.

Most of the Illinois coal used by those who replied to our questionnaire comes from the Southern part of the State. The average advance in coal from Franklin County which furnished the largest tonnage is 135%. The average increase in the cost of coal that comes from Saline County is 134%. These two counties are the largest producing counties in the Southern part of the State, according to the data obtained by the questionnaire.

In Central Illinois there is an average advance in the cost of coal from Sangamon County amounting to 150%. Considerable fuel also was obtained from Indiana points where the average advance is 137%.

All prices considered are f.o.b. mines. The question of freight rates from mines to factory will be taken up with the railroads.

All these advances in the cost of fuel are set forth in considerable detail in the survey made by your coal committee and may be consulted by members or others who are desirous of obtaining more information.

### High Mining Cost to Blame

Our investigation developed that the present high cost of soft coal is due to the high cost of mining, in which the following factors enter:

War time wages of miners, which constitute nearly 70 per cent of operating cost.

Voluntary absenteeism of miners, which greatly impairs

facturing plants. It even exceeds uneconomic, war-time wages paid on the railroads.

Office expenses of mine operators have been reduced to the minimum. Efforts are being continually made, with some success, to bring down the cost of machinery and other supplies.

#### How Wages Have Jumped Since 1914

The following is a comparison between wage rates paid in Illinois mines at the present time with wages paid in 1914:

	1914	1922
Mine Examiners.....	\$3.38	\$8.04
Track Layers.....	2.84	7.50
Track Layers' Helpers.....	2.62	7.25
Trappers.....	1.50	4.00
Bottom Cagers.....	2.84	7.50
Drivers.....	2.84	7.50
Timbermen.....	2.84	7.50
Water Haulers and Machine Haulers.....	2.84	7.50
Timermen.....	2.84	7.50
Pipemen, for Compressed Air Plants.....	2.77	7.41
Brushers.....	2.84	7.50
Shotfirers, per hour.....	.58	1.18
All other inside day labor.....	2.62	7.23
<i>Outside Day Wage Scale</i>		
Outside Day Laborers.....	1914	1922
Firemen and Stokers.....	\$2.24	\$6.86
	2.62	7.25

Hand mining rates, using the basic state rate at Danville, advanced from 61c per ton in 1914 to \$1.08 per ton in 1922. In some sections they were higher. In the Pontiac district the spread was from 95c in 1914 to \$1.42 in 1922, with a similar rate in the Wilmington field.

The old time skilled miner who used the pick has almost entirely disappeared. Ninety per cent of mine work is now common labor. Sixty-two per cent of all Illinois coal now comes from machine mines.

Manufacturers can compare these wages with rates paid by down state industrial plants for skilled labor. One of the largest of agricultural implement factories outside of Chicago has a scale which gives general blacksmiths 60c an hour, all around machinists 60c an hour, toolmakers 65c, machine operators 55c, lathe hands 58c, planers 60c, drillers 45c, machine helpers 42c, painters 45 to 50c, carpenters 50c, and shop labor 30c per hour. Shop labor in Chicago packing houses is paid at the rate of 37½c an hour and carpenters there are paid at the rate of from 55 to 61c per hour.

#### Potential Earnings of Illinois Miners

As an index of potential annual earnings of workmen at Illinois mines, under the present existing wage scale, we have selected for illustration a few large groups:

1,052	Coal loaders at 46 Illinois mines, working an average of 231 days, during a twelve months' period earned in 1920 an average of \$2,732.47, or \$10.83 for every day worked.
These men represent only 5½ per cent of the total number of the loaders at these mines, but they dug and loaded 20 per cent of the coal produced there.	
1,055	Day wage men at these same mines made annual earnings of \$2,585.02. Barring perhaps 10 per cent, this classification is experienced, but wholly unskilled manual labor, common to all other industries.
5,440	Loaders show an annual average earning of \$2,529.72.
3,252	Day wage men show an annual average earning of \$2,387.72.
21,191	Loaders who worked 51 to 75 per cent of those days only that the mine hoisted coal show an annual average earning of \$1,828.27.
14,354	Day wage men who worked 51 to 75 per cent of those days only when the mine hoisted coal show an annual average earning of \$1,585.31.
12,534	Loaders who worked 76 to 100 per cent of those days only that the mine hoisted coal, show an annual earning of \$1,970.37.
2,918	Loaders who worked more days than the mine hoisted coal, show an average annual earning of \$2,221.34.
7,663	Day wage men who worked more days than the mine hoisted coal, show an average annual earning of \$1,938.63.

Our investigation shows that the miners by working from 50 to 60% of the time the mines are in operation and less than half of the working days of the year on the average are able to earn enough to keep them and their families for a year.

This seems to show that the average daily wage is so high that a miner does not need to work more than half of the working days of the year and from half to three-quarters of the days the mine is operating in order to make a living. Is this fair, either to the consumer of coal or to wage earners in other industries which require uniform and constant attendance throughout the year? Should not the miners work approximately at least as many days in the year as the mine is hoisting coal and if so could not their daily wages be adjusted over that period so that their annual earnings would be sufficiently large, even with the smaller admittedly working period, to enable them to live comfortably and put something away for a rainy day and still bring about a material reduction in the cost of mining?

#### Other Coal Mine Facts

Other facts learned by your committee were as follows: The miners as a rule do not encourage or support welfare work.

Mine operators contribute largely to school funds in Southern Illinois. They have vocational schools in a number of important mining centers.

Rent for miners' homes is approximately \$2 a room; about 15% of them own their own homes. They have coal at cost and frequently are furnished electric light at cost. The average family budget to cover cost of living in cities allows about 23% to cover shelter, fuel and light. These items in the average mining town will not exceed 10 to 12% of the total annual expenditure for living expenses.

Most coal loaders do not work more than 6 hours a day. The check off system seems to be one of the means through which the miners' unions are able to control their membership. Whether it is a system generally supported by the men is doubtful. This system is not advocated by the operators.

Naturally, the chief demand at present is for coal for steam purposes, domestic demands in Illinois for the coal year having been almost entirely met. Comparatively little coal is in storage at the mines on the ground or held in railroad yards. The demand for fuel during the last two months has not been strong, although the mines in Illinois and adjoining fields have been operated at only about 60 per cent capacity. This is due to the high prices and also to the fact that industrial plants have not been in full operation.

#### Recommendations

Your coal committee believes that the only course that can be logically followed in the public interest is to take a firm stand for bringing down the price of fuel for power purposes and domestic consumption.

Fuel is not only a burdensome item in living costs but is one of the heavy expenses of manufacturing operations. At present it is much too high in price. It materially affects manufacturing costs and prices the consumer must pay for many commodities.

Since the price of any product must be based on what the consumer can pay for it the cost of production of that product must conform to this price. In view of the insistent demand and need of industry for bituminous coal at lower prices we believe that it is vital for the coal operators of Illinois and other states supplying this market to do those things necessary to bring about without unnecessary delay this greatly needed reduction in price.

War-time prices at this time are unjustified and detrimental to the prosperity of the country. Whether they are paid for the product of the mines, factories, transportation, material or labor, public sentiment should oppose any such artificial, unfair and uneconomic prices, the burden of which finally must be borne by the public.

Reduction of the price and the cost of production of coal to a reasonable basis will be in the interest of Illinois operators and the miners, for if industry in Illinois is unable to proceed in its struggling attempt to regain normality the demand for power fuel will not be sufficient to keep the mines in operation, and fuel will be obtained from other fields.

We believe that the coal mine operators should be allowed to work out an economical production cost without interference from outside sources and that they should be supported by this Association and other industrial and commercial bodies and the public generally.

We firmly believe that it is the duty of all employers and a responsibility which they should not evade, to establish and maintain to the greatest possible degree with their employees, working relationships which will insure steady and profitable operations for the industry, satisfactory working conditions and a just income based on ability and effort of employees and an acceptance by all concerned of their full responsibility to each other, to the community and to the public which is being served.

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Respectfully submitted,  
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Works, Rockford.

A. B. GOCHENOUR,  
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President, American Steel Foundries,  
Chicago.

factoring plants. It even exceeds uneconomic, war-time wages paid on the railroads.

Office expenses of mine operators have been reduced to the minimum. Efforts are being continually made, with some success, to bring down the cost of machinery and other supplies.

#### How Wages Have Jumped Since 1914

The following is a comparison between wage rates paid in Illinois mines at the present time with wages paid in 1914:

	1914	1922
Mine Examiners.....	\$3.38	\$8.04
Track Layers.....	2.84	7.50
Track Layers' Helpers.....	2.62	7.25
Trappers.....	1.50	4.00
Bottom Cagers.....	2.84	7.50
Drivers.....	2.84	7.50
Timbermen.....	2.84	7.50
Water Haulers and Machine Haulers.....	2.84	7.50
Timermen.....	2.84	7.50
Pipemen, for Compressed Air Plants.....	2.77	7.41
Brushers.....	2.84	7.50
Shotfitters, per hour.....	.58	1.18
All other inside day labor.....	2.62	7.23
<i>Outside Day Wage Scale</i>		
Outside Day Laborers.....	\$2.24	\$6.86
Firemen and Stokers.....	2.62	7.25

Hand mining rates, using the basic state rate at Danville, advanced from 61c per ton in 1914 to \$1.08 per ton in 1922. In some sections they were higher. In the Pontiac district the spread was from 95c in 1914 to \$1.42 in 1922, with a similar rate in the Wilmington field.

The old time skilled miner who used the pick has almost entirely disappeared. Ninety per cent of mine work is now common labor. Sixty-two per cent of all Illinois coal now comes from machine mines.

Manufacturers can compare these wages with rates paid by down state industrial plants for skilled labor. One of the largest of agricultural implement factories outside of Chicago has a scale which gives general blacksmiths 60c an hour, all around machinists 60c an hour, toolmakers 65c, machine operators 55c, lathe hands 58c, planers 60c, drillers 45c, machine helpers 42c, painters 45 to 50c, carpenters 45c, and shop labor 30c per hour. Shop labor in Chicago packing houses is paid at the rate of 37½c an hour and carpenters there are paid at the rate of from 55 to 61c per hour.

#### Potential Earnings of Illinois Miners

As an index of potential annual earnings of workmen at Illinois mines, under the present existing wage scale, we have selected for illustration a few large groups:

1,052 Coal loaders at 46 Illinois mines, working an average of 231 days, during a twelve months' period earned in 1920 an average of \$2,732.47, or \$10.83 for every day worked.

These men represent only 5½ per cent of the total number of the loaders at these mines, but they dug and loaded 20 per cent of the coal produced there.

1,055 Day wage men at these same mines made annual earnings of \$2,585.02. Barring perhaps 10 per cent, this classification is experienced, but wholly unskilled manual labor, common to all other industries.

5,440 Loaders show an annual average earning of \$2,529.72. 3,252 Day wage men show an annual average earning of \$2,387.72.

21,191 Loaders who worked 51 to 75 per cent of those days only that the mine hoisted coal show an annual average earning of \$1,828.27.

14,354 Day wage men who worked 51 to 75 per cent of those days only when the mine hoisted coal, show an annual average earning of \$1,585.31.

12,534 Loaders who worked 76 to 100 per cent of those days only that the mine hoisted coal, show an average earning of \$1,970.37.

2,919 Loaders who worked more days than the mine hoisted coal, show an average annual earning of \$2,221.34.

7,663 Day wage men who worked more days than the mine hoisted coal, show an average annual earning of \$1,938.63.

Our investigation shows that the miners by working from 50 to 60% of the time the mines are in operation and less than half of the working days of the year on the average are able to earn enough to keep them and their families for a year.

This seems to show that the average daily wage is so high that a miner does not need to work more than half of the working days of the year and from half to three-quarters of the days the mine is operating in order to make a living. Is this fair, either to the consumer of coal or to wage earners in other industries which require uniform and constant attendance throughout the year? Should not the miners work approximately at least as many days in the year as the mine is hoisting coal and if so could not their daily wages be adjusted over that period so that their annual earnings would be sufficiently large, even with the smaller admittedly working period, to enable them to live comfortably and put something away for a rainy day and still bring about a material reduction in the cost of mining?

#### Other Coal Mine Facts

Other facts learned by your committee were as follows: The miners as a rule do not encourage or support welfare work.

Mine operators contribute largely to school funds in Southern Illinois. They have vocational schools in a number of important mining centers.

Rent for miners' homes is approximately \$2 a room; about 15% of them own their own homes. They have coal at cost and frequently are furnished electric light at cost. The average family budget to cover cost of living in cities allows about 23% to cover shelter, fuel and light. These items in the average mining town will not exceed 10 to 12% of the total annual expenditure for living expenses.

Most coal loaders do not work more than 6 hours a day.

The check off system seems to be one of the means through which the miners' unions are able to control their membership. Whether it is a system generally supported by the men is doubtful. This system is not advocated by the operators.

Naturally, the chief demand at present is for coal for steam purposes, domestic demands in Illinois for the coal year having been almost entirely met. Comparatively little coal is in storage at the mines on the ground or held in railroad yards. The demand for fuel during the last two months has not been strong, although the mines in Illinois and adjoining fields have been operated at only about 60 per cent capacity. This is due to the high prices and also to the fact that industrial plants have not been in full operation.

#### Recommendations

Your coal committee believes that the only course that can be logically followed in the public interest is to take a firm stand for bringing down the price of fuel for power purposes and domestic consumption.

Fuel is not only a burdensome item in living costs but is one of the heavy expenses of manufacturing operations. At present it is much too high in price. It materially affects manufacturing costs and prices the consumer must pay for many commodities.

Since the price of any product must be based on what the consumer can pay for it the cost of production of that product must conform to this price. In view of the insistent demand and need of industry for bituminous coal at lower prices we believe that it is vital for the coal operators of Illinois and other states supplying this market to do those things necessary to bring about without unnecessary delay this greatly needed reduction in price.

War-time prices at this time are unjustified and detrimental to the prosperity of the country. Whether they are paid for the product of the mines, factories, transportation, material or labor, public sentiment should oppose any such artificial, unfair and uneconomic prices, the burden of which finally must be borne by the public.

Reduction of the price and the cost of production of coal to a reasonable basis will be in the interest of Illinois operators and the miners, for if industry in Illinois is unable to proceed in its struggling attempt to regain normality the demand for power fuel will not be sufficient to keep the mines in operation, and fuel will be obtained from other fields.

We believe that the coal mine operators should be allowed to work out an economical production cost without interference from outside sources and that they should be supported by this Association and other industrial and commercial bodies and the public generally.

We firmly believe that it is the duty of all employers and a responsibility which they should not evade, to establish and maintain to the greatest possible degree with their employees, working relationships which will insure steady and profitable operations for the industry, satisfactory working conditions and a just income based on ability and effort of employees and an acceptance by all concerned of their full responsibility to each other, to the community and to the public which is being served.

\* \* \* \* \*

Respectfully submitted,  
WILLIAM BUTTERWORTH, Chairman,  
President, Deere & Company, Moline.  
W. A. FORBES,  
President, Rockford Malleable Iron  
Works, Rockford.  
A. B. GOCHENOUR,  
President, Chicago Insulated Wire and  
Manufacturing Company, Sycamore.  
R. P. LAMONT,  
President, American Steel Foundries,  
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# The Phosphate Rock Deposits of South Central Tennessee.

By RICHARD W. SMITH, Assistant Geologist, Tennessee Geological Survey. \*

In the early days of the phosphate industry in the United States, South Carolina supplied most of the phosphate used. Later Florida came into prominence, and in 1894 assumed first place in point of production and has held it to this day. In 1893, with the chance discovery of the blue rock phosphate of Swan Creek, Tennessee became a factor in the market. In October 1895, the discovery of the brown rock, which is richer and more easily mined than the blue, caused Tennessee to advance from a poor third in production to second, surpassing the output of South Carolina, and being excelled only by Florida. In 1920 the phosphate production of the United States was divided as follows:

Florida .....	3,225,720 long tons
Tennessee .....	627,677 long tons
South Carolina .....	42,709 long tons
Western States .....	48,859 long tons
Total.....	3,975,011 long tons

## Types of Phosphate Rocks.

There are three distinct varieties of phosphate rock in Tennessee, known commercially as: (a) "brown" rock; (b) "blue" rock, and; (c) "white" rock. The brown rock is a product of the weathering and natural concentration of the phosphatic *Ordovician* limestones of the Central Basin or "blue-grass region" of Tennessee. Most of the phosphate produced is of this type. The blue phosphate is an unaltered phosphatic stratum of Devonian age outcropping at the edge of the Highland Rim that surrounds the Central Basin. This furnishes a small part of the production. The white phosphate is a chemical replacement product from certain Silurian and Devonian limestones. It is not being exploited at the present time, and will therefore not be further considered.

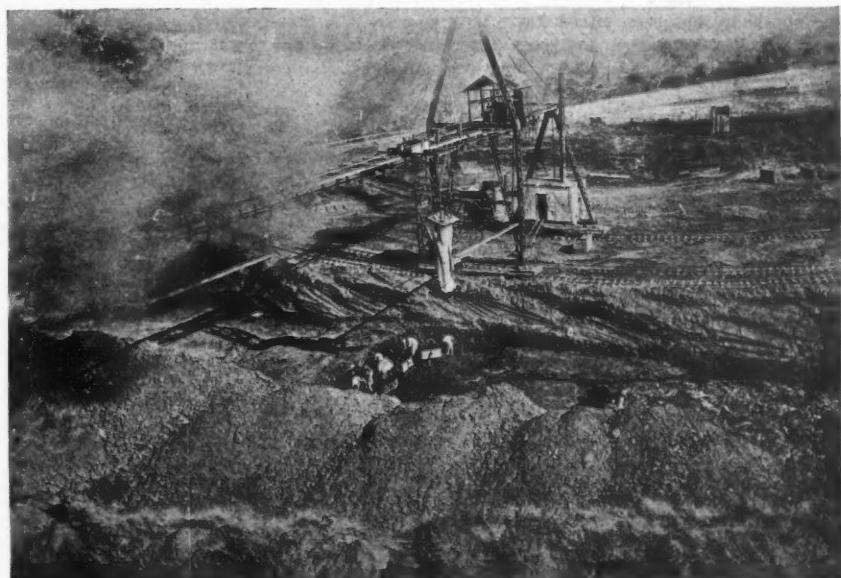
Chemically, phosphate rock may be considered, aside from impurities, as the normal tri-calcium phosphate of lime with the formula  $\text{Ca}_3(\text{P}_2\text{O}_7)_2$ , though it is probably a mixture of several phosphate minerals. It is contaminated with such impurities as iron oxide, clay, calcium carbonate, etc., which are eliminated as much as possible in preparing the rock for market.

## The Brown Phosphate.

The Ordovician seas contained considerable dissolved phosphate derived probably from previous sedimentary rocks, and the mineral *apatite*, a fluorine of chlorine calcium phosphate, and other phosphate minerals in igneous rocks. Some of this dissolved phosphate was deposited with the limestones,

either as the phosphatic shells of certain sea animals, or as a chemical precipitate with later chemical replacement of the calcium carbonate of these shells by calcium phosphate. In this manner some of the Ordovician limestones of the southwestern part of the Central Basin received a content of 25 to 50 per cent tri-calcium phosphate. This is particularly true of limited portions of the Bigby limestone from which the brown phosphate deposits of the Mount Pleasant district are derived. Here the Bigby limestone is a dense bluish crystalline limestone, usually banded with thin black layers which are oolitic in texture and sometimes plainly shelly and coarser grained than the rest of the limestone and produce the platy phosphate rock.

The present brown phosphate deposits are the products of the weathering of such a phosphatic limestone. Acidulated surface waters, charged with carbon dioxide of the atmosphere and of decaying vegetable matter, as well as with



MINING WITH CANTILEVER, HOOVER AND MASON MINE, MT. PLEASANT, TENN.  
Shows Overburden Piled on Mined-out Area.

organic acids of the soil, penetrating the pores of the rock and percolating downward through whatever channels may be present, dissolve and carry away the calcium carbonate in solution, leaving the more insoluble calcium phosphate in place, along with the insoluble clay, silica and chert. The extent to which such a weathering takes place depends upon the following factors:

- (1) Position of the phosphatic limestone strata relative to the surface topography.
- (2) Abundant jointing in the rocks, affording channels for the rapid circulation of underground waters.
- (3) Favorable surface drainage conditions.
- (4) Granularity of the rock.
- (5) Interstratified clay beds.

The position of the phosphatic limestone bed in relation to the surface topography is of utmost importance. If the limestone is buried so deeply by overlying rocks that weathering does not take place, there is of course no further con-

\*Published with the permission of the Tennessee Geological Survey. Besides his own personal experience the author has freely used the following publications of the Tennessee Geological Survey: Resources of Tennessee, Vol. IV, No. 2, The Brown and Blue Phosphate Deposits of South Central Tennessee, by J. S. Hook. Discussion by Lucius P. Brown. Resources of Tennessee, Vol. VI, No. 4. The Conservation of Phosphate Rock in Tennessee, by W. C. Phalen.

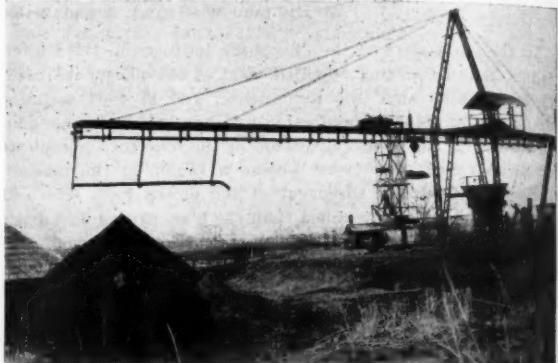
centration of phosphate. If the phosphatic limestone lies in a bed too far from the tops of the outlying hills to be completely exposed to surface conditions, but outcrops around the sides of the hills, there is formed on this outcrop a more or less connected group of phosphate deposits encircling the hill. These are known as "hat band", "rim", or less often "collar" deposits. But if erosion has carried away the overlying rock so that the phosphatic limestone itself forms the surface rock, the areal distribution of the phosphate deposit is not confined to a limited banded outcrop, but is determined more by other conditions. Such deposits are usually more extensive, and are known as "blanket" deposits.

Acidulated water seeping through incipient fractures and joints, gradually enlarges them by solution of the calcium carbonate of the limestone, until they become, in many instances, large underground waterways. In this way the so-called "cutters" are formed. These are long, narrow trenches filled with the commercially valuable residual calcium phosphate, or brown phosphate rock. If the phosphate left is platy, due to alternating bands of different phosphatic content of the original limestone, the original structure is preserved in the brown phosphate filling the cutters, the layers sagging in the center because of the removal of the calcium carbonate portion of the original limestone. In the Mount Pleasant field these cutters are usually pronounced in their development. In almost any of the large pits, where the phosphate has been mined, there may be seen long, narrow trenches, separated by the intervening walls of the fresh limestone, which are irregularly traversed by smaller cross cutters.

Clay seams are usually quite impervious to water, and tend

to undermine, allowed to fall in on the worked ground, and shoveled back. This method is dangerous to life and used to a very limited extent.

(2) Removal by scrapers. This method is fairly rapid, yet lends itself with ease to the direction and manipulation



CANTILEVER USED AT HOOVER AND MASON MINE.

of the operators, as the overburden being removed in comparatively small quantities at a time, the excavation can be made to conform more perfectly with the line of separation between the overburden and the phosphate.

(3) Removal by steam shovel. This is rapid and is often used in the large mines where topographic conditions warrant.

(4) By drag line. This is in reality a huge scraper worked by machinery, being attached to a cable and suspended from a long boom. The scraper is lowered to the ground at a distance from the machine, and hauled in toward the engine by a cable wound upon a revolving drum. The loaded scraper is then raised and swung around to a position over the dump pits, where the load is released. This method is the most common in the large mines.

(5) By hydraulicking. This is used in only one instance, where topographic conditions are favorable.

In every case the overburden removed is placed on land already mined out. It is often left in piles and not leveled off, leaving the land utterly unfit for future agricultural purposes.

**Mining.** The method of mining depends entirely upon the conditions involved. In the old days only the lump phosphate was removed by means of a "spall fork" and the rich phosphatic sand was allowed to go to waste. This wasteful practice is still followed by a few of the smaller companies, but the larger ones have improved their washing plants until they are able to run through their mills the entire thickness of the phosphate horizon; lump rock, muck and all. Where thick enough, mechanical methods of removal are used, such as steam shovel, cantilever, etc. The cantilever is a machine designed by one phosphate company at Mount Pleasant and resembles a travelling crane. It is used to raise and lower buckets from the cutters and dump them into the cars. In the narrow cutters pick and shovel methods must be used. In two instances the mining is done by hydraulicking.

**Transportation to Washer.** The material is usually transported to the washers by tram haulage, using dinky engines on a small narrow gauge line. Where the mining is done by



OVERBURDEN AND PHOSPHATE SHOWING STRUCTURE DIPPING TOWARDS CENTER OF CUTTER.

locally to restrict its downward percolation which limits the depth of the phosphate deposit.

#### Methods of Mining Brown Rock.

Brown rock deposits lie near the surface of the ground and are therefore easily worked in open pits. The overburden varies in thickness from almost nothing to such a thickness that its removal is unprofitable.

**Removal of overburden.** Cleaning off the overburden is the first operation performed. The following methods are used:

(1) The caving system. In this method the overburden

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## MANUFACTURERS RECORD.

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hydraulicking, the muck is pumped from a sump at the pit through large pipes to the washer.

**Preparation for Market.**

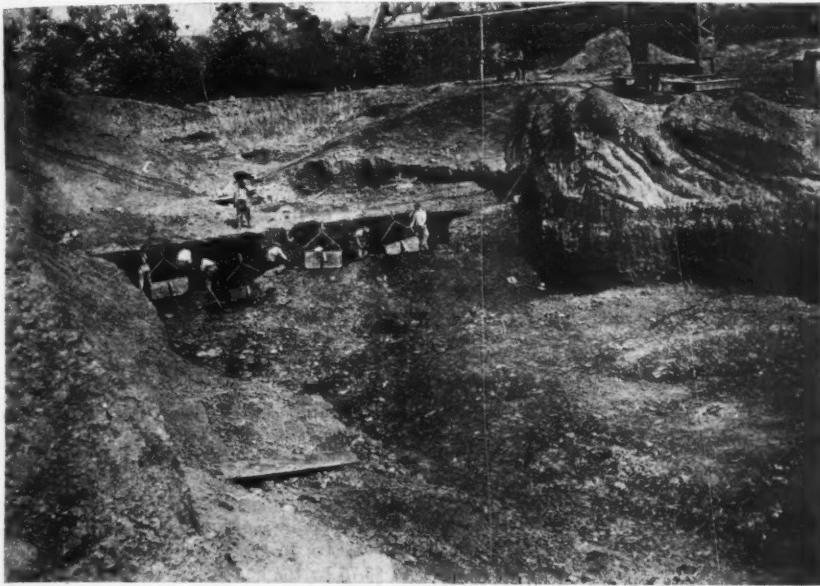
**Washing.** The washing processes whereby the mined rock is freed from clay, chert, and limestone are elaborate, and the mills in which the work is done are, for the most part, large and modern. The principles of the various washing processes are uniform throughout, but the details of manipulation vary at the different plants. The crude rock is carried to a crusher at the top of the mill where water is added, and the subsequent operations, for the most part, are conducted by gravity. From the crusher the material is then delivered

cylindrical driers, similar to rotary cement kilns. The rock is fed in at either the hot or the cold end.

**The Blue Rock Phosphate.**

**Origin.** Bordering the part of the Central Basin containing the brown Ordovician phosphates, the overlying Devonian formation contains a phosphatic stratum occurring just below the Chattanooga "black" shale, which is quite generally distributed. It varies in thickness from a few inches to two or three feet; and in composition from a highly phosphatic oolitic variety to an ordinary shale or sandstone. It is evidently a sediment that has not been altered since its formation. Unlike the Ordovician phosphatic limestones, it is not a direct concentration of phosphate by animal and chemical deposition.

How then did it get its phosphate content? The principle clue to its origin is its position. It is only present where the underlying Ordovician limestone is phosphatic. Furthermore in places where there is an intervening layer of Silurian limestone and the blue rock does not rest immediately upon the Ordovician, it is very much less phosphatic. It is therefore thought that just before Devonian time there was an interval of erosion, during which brown phosphate deposits, similar to those in the Central Basin today, were formed by the leaching of the phosphatic Ordovician limestones. These leached areas, upon submergence in the Devonian sea, would furnish an abundant source of material for making up the new beds, and if so situated as to receive no additional sediments, would tend to produce a high grade phosphate



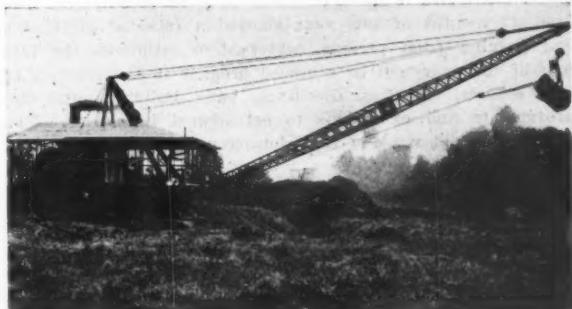
ANOTHER VIEW OF THE HOOVER AND MASON MINE. MINING A CUTTER WITH THE CANTILEVER.

to log washers, which are long troughs containing two heavy shafts with projecting teeth, so arranged that when the shafts are revolved in opposite directions, they gradually force the rock in one direction, constantly agitating and disintegrating it. From the log washer the rock is delivered to a revolving screen through which the sandy material passes, the oversize being delivered to a slowly moving belt, from which the chunks of limestone, mud balls, and chert are hand picked. The plate rock is then ready for drying.

The sand phosphate, usually after further grinding, is cleaned by several thorough scrubbings. This is accomplished either by settlers or clarifiers provided with riffles, or by a series of settling tanks. The flow of water from these tanks while being filled, is so regulated that about five feet of water is kept over the sand deposited. In this way the clay and the fine particles of silica sand and phosphate sand are largely removed. When the tank is filled, a few minutes are allowed for final settling, and the water drained off. The sand is then washed out by a nozzle under heavy pressure to another tank, where it again settles, and the process repeated several times. This removes practically all the clay, and the product is finally carried to a draining tank, where it goes to the driers. The overflow from the tanks in this process of cleaning goes to long settling tanks with bottoms inclined to a central hopper, where the finest material is caught. The overflow from this goes to settling ponds where the tailings are caught.

**Drying.** The drying is usually accomplished by rotary

blue rock is workable where a minimum thickness of about 24 inches of high grade rock is present. Such deposits occur at intervals over the whole area, and are usually connected with one another by the thinner unworkable portions. It is generally necessary to use underground methods of mining. Main tunnels are driven from the surface into the phosphate, and at regular intervals, rooms about 25 feet wide are turned



DRAG LINE AT WORK REMOVING OVERBURDEN.

off at right angles, leaving pillars of about the same width. After the rooms are completed the pillars are drawn, allowing the roof of shale to cave. The blue rock is not washed like the brown, but is simply crushed and dried in the rotary kiln driers.

Phosphorus in its compounds is a very necessary element

in the growth of plant life. The greater part of the phosphate rock mined in Tennessee is treated with sulphuric acid to form a superphosphate of lime, in which condition a maximum amount of phosphorus is immediately available as plant food.

It has been demonstrated in recent years that the phosphate rock, when finely ground and mixed with the soil, becomes slowly available, through the action of the weak acids formed there by the decomposition of organic matter. To meet this demand, some of the rock, both blue and brown, is finely pulverized and shipped direct to the agriculturist. The phosphorus is much cheaper in this form, but the results of its application are not considered to be so immediate. It is probable that in the future this use will increase, allowing the development of lower grade deposits not suitable for the manufacture of acid phosphate.

#### \$250,000 Machine and Repair Shops to Be Built.

Electra, Tex., July 29—[Special.]—The Magnolia Petroleum Company, of Dallas, will expend \$250,000 here for central repair and machine shops. The new buildings will be of steel frame construction and will include a warehouse 65x175 feet, machine shop 40x112, forgehouse 140x60, pipe machine-house 40x60, boiler shop 40x80, garage and storage warehouse 26x180, automobile repair shops 40x40 feet. The company contemplates erecting its own ice plant with a capacity of 2000 tons daily. A handsome office building also will be included in the group.

All of these buildings will be inclosed by a steel wire fence which will take in a tract of ground 500 by 1000 feet.

#### \$2,000,000 Apartment House for Norfolk.

The Garden Terrace Corporation of Norfolk, Va., is planning construction of a 60 family apartment house to be erected on Armistead Bridge road west of the West Ghent boulevard. Herbert W. Simpson is the architect. The new structure is estimated to cost \$2,000,000, and will be of brick and stone with terra cotta trim. It will be four stories high, fronting 200 feet on Armistead Bridge road. All the apartments will have outside exposure. There will be a total of 284 rooms and in the rear of the building a sufficient number of garages will be provided to accommodate all of the apartment tenants. Construction will begin soon.

#### \$1,500,000 Building Program at Tuscaloosa.

Tuscaloosa, Ala., July 26—[Special.]—This city has under way and in sight a building program totalling over \$1,500,000 which represents a marked increase over the last six months of 1921, with a program of over \$1,000,000. The first six months of this year showed a total of \$1,472,000, and judging from present conservative estimates the last half of the year will be a record breaker in the erection of new schools, churches, dwellings, bank buildings and improvements and extensions to established industries. The more important work of this character represents a total at present of \$1,560,000.

#### Contract Let for 100 Dwellings to Cost \$500,000.

Oklahoma City, Okla., July 29—[Special.]—The Frank Hoopes Home Building Company has been awarded contract for the construction of 100 houses by the South Oklahoma Town Company in the Westwood addition, a few blocks east of Packingtown.

Modern five and six-room houses will be built, valued at about \$5000 each, so that total cost of the development will be around \$500,000. Construction on a limited number of the houses will be started immediately, and it is expected that the entire program will be completed within one year's time.

#### Protection to Men and Supply of Cars Alone Necessary to Big Coal Output in West Virginia.

Charleston, W. Va., July 27—[Special.]—Although the coal industry of West Virginia is badly crippled by inadequate transportation facilities, which have seriously curtailed the output in the state, reducing it from 1,700,000 tons of coal per week to 980,000 tons per week, yet as the month draws to a close owners of mines in both northern and southern West Virginia which have been closed down since the beginning of the strike are preparing to resume operations in conformity with the request of the President of the United States. Such resumption is dependent upon two factors: There must be visible protection for the miners who desire to work but who have been afraid to do so because of the menacing attitude of strikers and the violence to which non-union miners are subjected and there must be more adequate transportation facilities, for under existing conditions the supply of empty cars and the motive power is insufficient to take care of the present production.

In order to secure visible protection, the Northern West Virginia Operators Association has asked the Governor of West Virginia to station state troops at important points in the state, and in order to secure better transportation facilities, has asked the President to make every effort to furnish better and more adequate transportation facilities. Without such protection and without more cars, it will be impossible, operators point out, to make any progress in increasing the coal output of the United States. The attitude of striking miners is one of defiance and in some quarters among miners sympathizers may be heard talk of war against the United States Government itself. Operators however, are facing the issue squarely.

When the price situation seemed to be getting beyond control, owing to smaller operators accepting higher prices than those stipulated in the Hoover agreement, all grades ranging in price from \$7.25 to \$8.50, owing to the spirited competitive bidding, the denial of cars to these operators caused prices to drop to \$3.50 to \$3.75 by the end of the week. A majority of the operators, however, never did charge more than the Hoover maximum.

The shortage of equipment has been and is being most seriously felt in the Logan region and along the Norfolk & Western Railway. Production in the Logan territory is being affected to the extent of 70 per cent. In the northeastern part of Kentucky production has been reduced to 55,000 tons a week, or just 19 per cent of potential capacity.

#### Contract Awarded for 30 Dwellings to Cost About \$7500 Each.

The Beverly Place Development Company of Macon, Ga., has awarded contract to Walter F. Thomas of Macon for the construction of 30 houses at a cost of about \$7500 each. The architects are Happ & Shelverton of Macon. The dwellings will be of two story type, about 35x40 feet, of brick veneer construction, hardwood flooring; and tile, slate and Johns Mansville asbestos roofing. Hot water heating plants will be installed.

#### \$2,100,000 Conduit Contract Awarded Arundel Corporation.

The Arundel Corporation of Baltimore has received the contract for construction of an eight mile conduit from Great Falls of the Potomac to Washington, D. C. The contract price is about \$2,100,000 and construction will involve the use of from 135,000 to 140,000 barrels of cement; the opening dimensions are ten by ten feet with over all dimensions of 16 feet by 11.8 feet.

## THE IRON AND STEEL SITUATION

### Iron and Steel Production Increase Halted by the Strikes.

Pittsburgh, Pa., July 29—[Special]—Production of pig iron and steel has decreased further, on account of traffic conditions. While no close estimate can be made, a fair guess is that production of steel ingots is down between 5 and 10 per cent from the maximum rate of the year, which was attained late in June. Production increased rapidly during the first three months of the year, and then very slowly in the next three months, after the coal strike had started. The influence of the coal strike was met by importing large quantities of coal from West Virginia and Kentucky, but congestion began to develop on the railroads involved about the middle of June and after July 1, when the railroad shopmen's strike began, and the movement of coal across the Ohio river almost entirely ceased.

There has been a little increase in production of coke in the Connellsville region in the past 30 days, but hardly enough to count. The attitude of strikers, both the non-union strikers in the Connellsville region and the regular union strikers in the Pittsburgh coal district, has been decidedly stronger in the past month, or since officials at Washington began their efforts to improve the coal situation.

The coal scarcity touches the iron and steel industry first at by-product coke ovens, causing curtailment there, then banking or blowing out blast furnaces, then reduced production of steel. There seems to be sufficient coal for steel works to make and roll all the steel for which they can get pig iron. Some by-product ovens seem to have stocks sufficient for 30 days' operation at their recent rates, while others began reducing operations before the middle of July.

The priority system of distributing coal puts steel producers and consumers practically at the bottom of the list, and receipts will probably be light. However, the Pennsylvania railroad and the Pittsburgh & Lake Erie have announced that they are functioning practically 100 per cent, hence they are not discriminating in the movement of coal and will not follow any priority unless specifically instructed from Washington. There was excited buying of Connellsville steam coal through last Wednesday, and the market price went up to \$8.50. Afterwards buyers started withdrawing from the market, in expectation of fixed prices, probably \$3.75 for lump, \$3.50 for mine-run and \$3.25 for slack, and the market has become very quiet, with the price off \$1 a ton to \$7.50. Some Connellsville operators have expressed an expectation that they will obtain a dollar more than the predicted \$3.50 basis. This coal sold at under \$1.50 early in March, or lower than in February.

Thus far the coal scarcity seems to have affected the production of steel more than its consumption, but no consumers appear to have had their operations reduced by not receiving enough steel, the inference being that production had exceeded consumption and buyers had provided themselves with some stocks. The pressure upon mills for deliveries is not reduced, but is rather increased. It is plain, however, that if conditions remain as at present the rate of consumption will go down materially, as it requires coal to consume steel, as a rule, also good transportation service. Steel producers are disappointed, if not disgusted, that the orderly and substantial improvement in business and industrial conditions that was proceeding so nicely in the earlier months of the year should be so rudely interrupted, and by such a cause as men being unwilling to work at wages which steel men consider high in proportion to wages being paid in the industries generally.

Transactions in steel for late delivery are almost entirely interrupted, as purchases and sales already made will take longer to complete than was expected, on account of reduced

operations. The 1.60c minimum on bars, shapes and plates has practically disappeared, but basis prices in general are unchanged, while premiums for early delivery of small lots have been increasing.

There is very little disposition to buy pig iron, otherwise prices would no doubt advance sharply. There are some stocks in the hands of both producers and consumers. Last sales were at \$25 for Bessemer, \$24 for basic, \$25 for foundry and \$27 for malleable, f.o.b. valley furnaces.

### Activities in Birmingham District Restricted Only by Transportation Inadequacies.

Birmingham, Ala., July 31—[Special]—Industrial activities in the Birmingham district are most satisfactory, everything considered, the coal coke, pig iron and steel productions being strong, finished and fabricated products being turned out in great quantities, obstacles in other districts not being experienced here. The nation-wide railroad strike is interfering with the coal, coke, iron and steel business after movements get to the end of the initial lines. No interruption whatsoever is noted in the operation of mines, coke ovens, steel mills, blast furnaces, cast iron pipe works and foundries and machine shops and other industries.

Consumers of pig iron in various parts of the country are willing to extend business to the Alabama producers but delivery is the question. A few sales are still being made every week, in tonnages ranging from 100 to 500 tons. The quotations are firmly given at \$19 to \$20 per ton, No. 2 foundry, delivery during the balance of the year. The report of \$18 and \$18.50 price being acceptable in the Southern territory is not verified in this section. The local consumption has not been reduced, and all melters are well stocked and are still receiving some iron. Production has not been disturbed and those who keep in touch with the production estimate look forward to an increased output for July in comparison with the previous month and anticipate a greater production than the month before that. The big No. 1 blast furnace of the Tennessee Coal, Iron & Railroad Company at Ensley is said to be ready for the torch. Two other furnaces will probably be blown in August.

Attention is being given to raw material supplies and within another two weeks or so the ore supplies will be greatly improved, old mines being rehabilitated and more labor being brought into the district for the work. Mine No. 4 at Reeders, on Red Mountain, in the Bessemer vicinity, is being operated again after a long idleness; the ore mines of the Tennessee Company in more than two or three places are to operate on double turn. The railroads have for a long time handled ore in cars which remain on the same route all the time, never leaving the district and in many instances never being used except between the same mines and blast furnaces.

The surplus pig iron on yards of furnaces and on warrant yards of this State aggregates less than a week's production, so far as iron available for the open market is concerned. Even with the delays in transportation there has been no accumulation of iron, so far as furnace interests admit.

Cast iron pipe production is also being kept steady. Local railroads with one exception are starting out all movements, not guaranteeing deliveries beyond initial lines, however. Foundries and machine shops are getting in a large amount of small contracts, the aggregate keeping plants well going. One of the larger foundries and machine shops of the district has been getting in considerable mine machinery work, hoisting engines, etc.

The coal and coke activities of the district are disturbed only as to transportation. The Louisville & Nashville, Cen-

tral of Georgia, Seaboard Air Line, Frisco and Illinois Central, as well as the Atlanta, Birmingham & Atlantic railroad, are doing very well under the difficulties, while the Southern Railway is only partially handling the business. Many new engines have been brought to this district to assist in the moving of coal. The production in Alabama has reached 370,000 tons a week and if the railroad cars were available and were handled promptly this amount could be greatly increased. The United Mine Workers of America in Alabama are considering cessation of work August 1 but this district is intensely non-union and if all the members of the union would cease there would be but few places affected. Alabama coal operators are co-operating with the Government in the distribution of fuel, priority orders and instructions to be carried out in this field. Operators in this field took many contracts for coal before the present shortage became effective at prices much under the schedule fixed by the Government and the advances on the surplus coal have not been great.

All coke production is being maintained, transportation facilities between mines and oven plants being good. The market for coke is very strong, with prices firm. Railroads are still in position to furnish coke racks, but as in other products are not guaranteeing deliveries beyond initial lines.

The scrap iron and steel market has taken on additional strength and there is some demand for almost all products on the list with the exception of heavy melting steel. Quotations for scrap are showing firmness though several products are still in the one class. Quotations:

**PIG IRON**  
 No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$19.00 to \$20.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$19.50 to \$20.50; iron of 2.75 to 3.25 per cent silicon, \$20.00 to \$21.00; iron of 3.25 to 3.75 per cent silicon, \$20.50 to \$21.50; iron of 3.75 to 4.25 per cent silicon, \$21.00 to \$22.00; charcoal iron, f. o. b. furnaces, \$30.00 to \$32.00.

**OLD MATERIAL**

Old steel axles.....	\$15.00 to \$15.50
Old iron axles.....	15.00 to 15.50
Old steel rails.....	15.00 to 15.50
Heavy melting steel.....	11.50 to 12.50
No. 1 R. R. wrought.....	13.00 to 14.00
No. 1 cast.....	15.00 to 15.50
Stove plate.....	15.00 to 15.50
Old car wheels.....	14.00 to 15.00
Old tramcar wheels.....	14.50 to 15.50
Machline shop turnings.....	7.00 to 8.00
Cast iron borings.....	9.00 to 10.00
Cast iron borings (Chem).....	13.40 to 14.00

### Big Merger of Kentucky Coal Mining Companies— Capital of New Concern Placed at \$2,500,000.

The Log Mountain Consolidated Coal Company has been organized through the merger of several Kentucky mining concerns, the project being effected by capitalists of Cincinnati and Kentucky.

Among those interested in the transaction the name of John Hoffman of Cincinnati is mentioned as one of the principals. The capital of the new company is placed at \$2,500,000. The properties of the following companies are included in the deal: Hignite Coal Company; Kentucky Fuel Company; The Mingo Mining, Coal and Coke Company, the Bennett's Fork Coal Mining Company, and the Yellow Creek Coal Company.

Reports state that 1,000,000 tons of coal annually will be mined from about 38,000 acres of land owned by the new company or included in the lease terms of the merger.

### American Aeroplanes to China.

The Curtiss Aeroplane & Motor Corporation of Garden City, Long Island, New York, advises the MANUFACTURERS RECORD that they have shipped six aeroplanes to China with the understanding that this is a preliminary order. Further, the Secretary-Treasurer of the Corporation, Mr. J. A. B. Smith advises: "We have sent an engineer to China in connection with this enterprise and upon receipt of a report from him relative to the operations of the air line, will be glad to furnish you with details."

## RAILROADS

### Warfield Declares Big Railroad Mergers Plan Impracticable—Car Building and Repairs on Large Scale Suggested.

Permanent standing conference committees have been named by the National Association of Owners of Railroad Securities and by the Association of Railway Executives to discuss the proposals for pooling interchange freight cars under a central agency, as advocated by representatives of the security owners association before the Interstate Commerce Commission. This was disclosed in a statement before the United States Senate committee on interstate commerce last week by S. Davies Warfield, president of the Association, when a tentative bill was presented for the federal incorporation of the National Service Corporation. This corporation is the agency organized some time ago by the Association under a state charter and which has already financed equipment purchases for several railroads. It is stated that under a federal charter its operations and its usefulness would be extended. Advantages are also ascribed to this agency for financing the rebuilding of freight cars without railroads putting up a cash margin, and extensive plans are revealed for car repairs, etc. Enormous savings, (over \$300,000,000 a year), are said to be possible, and many "fundamental causes for the present unrest would be largely eliminated."

"As a result of correspondence," Mr. Warfield states, "a committee was appointed, consisting of the chairmen of the four railroad groups and the chairman of the advisory committee of the Association of Executives, to meet a committee named by the Association of security owners to discuss its proposals." There was no objection, it is stated, to the plan for purchasing equipment, but the proposals for pooling freight cars were deferred and will now be immediately presented before the permanent railroad conference committee recently appointed. Senator Cummins, chairman of the Senate committee, requested a copy of the proposals for car pooling.

In the statement to the Senate committee Mr. Warfield made an urgent appeal to maintain the provisions of Section 15a of the Transportation Act as a necessity for adequate rail transportation, saying there is now no fixed return and no guaranty, as the 5½ to 6 per cent provision expired March 1 last; that the Interstate Commerce Commission determines entirely and makes public the return which it will permit the roads to earn, and it also fixes the aggregate value of property of each of the four groups of roads upon which the return is computed. This section, he states, contains only the essentials to provide for the inequalities between heavy traffic territories and territories of light traffic, and that no other method would make satisfactory compensatory provision for these inequalities, inherent in transportation by rail.

Furthermore, Mr. Warfield states that the attempt to provide against these traffic inequalities by consolidating the railroads into a few large systems is utterly impracticable and that to lay out territories so that competing newly consolidated large railroad systems operating therein would earn alike "cannot be done," and "the necessary results of competition would be varied earnings." Excepting through Section 15a inequalities could, he states, be provided against only by "drastically consolidating all the railroads into one large system." Big consolidations should remain permissive.

The members of the railroad conference committee are T. DeWitt Cuyler, chairman, Howard Elliott, L. F. Loree, W. B. Storey and Daniel Willard. The members of the security owners conference committee are S. Davies Warfield, chairman; Geo. E. Brock, Haley Fiske, Darwin P. Kingsley and John J. Pulley.

August 3, 1922.

**Railroads' Net Incomes Show Increases.**

The Baltimore & Ohio Railroad Co.'s statement of earnings and expenses for June shows railway operating revenues, \$17,580,515; increase as compared with June of last year, \$1,264,491; railway operating expenses, \$13,776,907; decrease, \$1,210,798; net revenue from railway operations, \$3,803,608; increase, \$2,475,289; net railway operating income after taxes, rentals, etc., \$2,666,332; increase, \$2,345,199. The accumulation for the first six months of the current year on the Baltimore & Ohio shows railway operating revenues, \$98,679,159; increase as compared with the same period of last year, \$2,448,208; railway operating expenses, \$77,698,924; decrease, \$5,733,857; net revenue from railway operations, \$20,980,235; increase, \$8,182,065; net railway operating income after taxes, rentals, etc., \$14,580,295; increase, \$6,949,831.

The Western Maryland Railway Co. reports for June operating revenues of \$1,271,571; decrease as compared with the same month of last year, \$179,654; total operating expenses, \$972,895; decrease, \$154,920; net operating revenues, \$298,676; decrease, \$24,733; operating income after taxes, \$258,676; decrease, \$4733; total income after rentals, etc., \$267,290; decrease, \$1265; net income after fixed charges, \$4694; increase, \$2738. Ratio of operating expenses as to gross earnings 76.51 per cent; decrease, 1.20 per cent.

The Southern Pacific System statement for June shows gross revenues, \$22,897,098; decrease as compared with the same month last year, \$147,129; net operating income, \$4,994,039; increase, \$1,813,985. For the six months period gross revenues were \$120,127,219, as compared with the same period of last year; a decrease of \$10,121,145, net operating income \$17,042,524; increase, \$3,683,105.

**Car and Engine Repairs in Spite of Strike.**

In view of the continuance of the strike of railroad shop workers the following from the Philadelphia Ledger is pertinent and interesting:

"Many locomotives are finding their way to the Baldwin locomotive shops in this city or Eddystone from various sections of the country, for repairs. The plants are working almost to the limit. In some cases there are three shifts of eight hours each. This work is not confined to repairs, for the number of orders for the new locomotives recently have been large, and on this work alone there is several months' steady business."

"The Pennsylvania Railroad is not sending any of its locomotives or rolling stock off its lines to be repaired. An officer of the company says the road is in good position as to cars in service. There are over 280,000 freight cars owned by the system, and less than 14 per cent are in bad condition."

**\$3,000,000 Railroad Contract Let.**

The Atchison, Topeka & Santa Fe Railway Co. has let a contract to the Bates & Rogers Construction Co., of Chicago, to build a cut-off line 43½ miles long between Eldorado and Ellinor, Kan., which when completed will shorten by 14 miles the distance to and from Oklahoma City and also Texas points such as Fort Worth, Dallas, Waco, Galveston, etc. The estimated cost of the improvement is \$3,000,000. It will be made under the supervision of C. F. W. Felt, chief engineer of the system.

**Electric Railway Extension.**

Bids were invited until August 1 by the Southwestern Traction Co., Fort Worth, Tex., for the construction of about 5½ miles of interurban railway which will constitute an electric railway extension to Lake Worth, where the city administration has set aside 500 acres of land for an amusement park. It is estimated that the cost of construction will be approximately \$300,000. The offices of the company are

at 1404-5 Farmers & Mechanics Bank Building. W. P. Welty is secretary and D. A. Davis engineer. Railroad construction materials will be wanted and the type of construction will be like that of steam railroads. It is expected that the work will soon be let. It is also desired by Mr. Welty to get in touch with amusement companies.

**Railroad Financing Approved.**

The Tennessee Central Railway Co. has been authorized by the Interstate Commerce Commission to issue stock and bonds to a total of \$6,000,000 it is announced at Nashville. There will be \$3,000,000 in common capital stock and the rest in bonds, of which \$1,500,000 will be issued in connection with the purchase of the road and an equal amount for equipment, betterments, etc. The Commission recently authorized a loan of \$1,500,000 to the road to finance equipment and betterments until the bonds are placed. Of this sum \$563,000 will be used to buy 8 new locomotives and a large amount of rails. Orders have also been placed for some steel passenger cars, freight cars and shop equipment, which will be taken care of with the remainder of the loan.

The directors of the Baltimore and Ohio Railroad Co. have approved the final settlement with the United States Railroad Administration for claims arising during the federal control of railroads. The road's claims were \$13,000,000.

Other recent settlements of claims reported from Washington include the following: St. Louis-San Francisco Railroad Co., \$5,385,000; St. Louis-San Francisco Railroad Co., of Texas, \$315,000; Fort Worth & Rio Grande Railway Co., \$251,883; Quanah, Acme & Pacific Railway Co., of Texas, \$72,226; Paris & Great Northern Railroad of Texas, \$23,111; Brownwood, North & South Railroad of Texas, \$6551; Missouri, Kansas & Texas Railway Co., about \$5,000,000; Galveston Union Passenger Depot Co., \$35,000.

The Norfolk & Portsmouth Belt Line has been authorized by the Interstate Commerce Commission to issue \$150,000 of 5 per cent bonds to fund indebtedness.

**New Equipment.**

Baltimore & Ohio Railroad has ordered 15 Pacific type locomotives from the Baldwin Works.

Car inquiries reported include 50 steel underframe refrigerator cars of 40 tons capacity for the Chesapeake & Ohio Railway and 6 passenger cars and 3 baggage and mail cars for the Winston-Salem Southbound Railway.

Equipment orders recently placed include 6 eight wheel switching locomotives ordered by the Southern Railway from the Baldwin Works, 1000 single sheathed box cars of 50 tons capacity by the Norfolk & Western Railway from the Ralston Steel Car Co., and 5 baggage cars, 4 mail cars, 2 compartment cars and 4 passenger cars by the Nashville, Chattanooga & St. Louis Railway from the American Car & Foundry Co.

**Railroad Branches Sold by Receiver.**

A report from Greenwood, Miss., says that A. E. Gardner purchased both the Percy and the Webb branches of the Columbus & Greenville Railroad when they were sold there July 24 by the receiver, A. T. Stovall. The first branch, from Stoneville to Percy, Miss., 23½ miles, was sold for \$25,750 and the other, from Itta Bena to Webb, Miss., 15 or 20 miles longer, for \$45,750.

**Passenger Service Resumed.**

A passenger train is now being operated daily over the Tennessee, Alabama & Georgia Railroad between Alton Park, Chattanooga, Tenn., and Gadsden, Ala., according to a report from Gadsden, which says that upon the receipt of new equipment the service was resumed last week after having ceased on May 1, when C. E. James, of Chattanooga, and associates took over the property.

## Good Roads and Streets

### Alabama Highway Commission Awards Road and Bridge Contracts Totaling Nearly \$900,000.

Montgomery, Ala., July 29—[Special.]—The Alabama State Highway Commission has awarded contracts for the famous Rooster Bridge over the Tombigbee River to Doullut & Williams of New Orleans for the Waddell type of vertical lift span bridge at their bid of \$223,075.

At the same time a contract was awarded for road work on the highway from the Montgomery County line to Tuskegee, Ala. to the Vaughn-David Construction Company of Montgomery for approximately \$157,000 and the bridge work to Austin Bros. Bridge Company of Atlanta, Ga., for \$73,000.

A contract for about 3½ miles of road in Cleburne County was let by the commission to Stanley-Singer Co. of Lafayette, Ala. for \$25,500. And in Crenshaw County a project was authorized calling for the expenditure of approximately \$400,000 for a 30 mile stretch of road from Pleasant Grove Church to the southern border of Crenshaw County.

### Surplus Army Equipment Returned for Road Making.

The first shipment of surplus war material used by the American army of occupation in Germany and now to be distributed among the States for use in road construction arrived at Brooklyn, N. Y., July 1. The equipment, consisting of 30 trucks, 7 tractors, 4 concrete mixers, and 3 road rollers, will be distributed by the Bureau of Public Roads of the United States Department of Agriculture in the same way as was several million dollars' worth of material from France and the arsenals and camps in this country. Additional material for road making to be shipped from Germany will consist of several hundred trucks, a number of tractors, and about 2,000,000 pounds of spare parts for trucks.

### \$326,250 Contract Let for Road Surfacing.

The Unit Construction of St. Louis, Mo., has received contract at \$326,250, for the construction of asphaltic concrete surfacing on project No. 25 in Clay County, Missouri, under direction of the Missouri State Highway Board. A. C. Lingley, of Kansas City, Mo., is engineer in charge.

### \$276,000 Road Project in Marion County, Ala.

Hamilton, Ala., July 28—[Special]—The lowest bidder this week on project in Marion County from the Walker County line to Guin was the Smith Company of Birmingham, with the figure of \$276,421.27.

### \$400,000 Club House to Be Erected.

Kansas City, Mo., July 31—[Special]—The Marquette Building Association will begin construction within 30 days of a club house at Forest Ave. and Armour Boulevard to cost between \$350,000 and \$400,000. The new structure which is being built for the Knights of Columbus will contain a large auditorium, gymnasium, swimming pool, meeting hall, etc.

### Textile Mill Notes.

Victor Monaghan Co., Seneca, S. C. have awarded contract for the erection of a one story daylight construction cloth room and warehouse building, 45x150 feet to J. C. Cunningham, of Greer. The engineers are J. E. Sirrine & Co., of Greenville.

John F. Banister, Liberty, S. C., is interested in establishing a bleachery in that locality, having a location with plenty of clear water on the Southern Railway line from Washington to Atlanta.

### Commendations, Kicks and Comments

#### We Wish the Same.

GEO. D. CRAIG, Craig Brothers, Spencer, Va.—Enclosed you will find check for \$6.50 for another year's subscription to your valuable paper. I wish it could be read in every home in U. S. A.

#### Indispensable.

JOHN S. WALTERS, Asheville, N. C.—I enclose post office order for \$6.70, one year's subscription and one extra number of July 13th, 1922.

The RECORD is indispensable to me—the premier of journals, patriotic and courageous and clean.

#### Of Benefit to the Entire Country.

SESSIONS LOAN & TRUST COMPANY, Marietta, Ga.—It gives us pleasure to enclose you our check for \$6.50 for renewal of our subscription to MANUFACTURERS RECORD. I consider that you have done a very constructive work for the South and your paper has really been of benefit to the entire country. I wish it was so that the MANUFACTURERS RECORD could be sent to every mortgage investor and public officer in the country.

#### Wishes That Backbone Were More Universal.

A. G. HAMMETT, General Merchandise and Plantation Supplies, Allen, La.—I wish it were possible for all the papers in this great country to have the BACKBONE to come out and say what they think with reference to the Herrin massacre. I have always admired your spirit in coming clean with any issue at hand, and my wife has accused me of not caring to read anything except the MANUFACTURERS RECORD. I trust you will continue this work, as it is great.

#### One Who Realizes Our National Danger.

H. B. HEARN, PRESIDENT, Shreveport Railways Company, Shreveport, La.—For many years I have been a regular reader of your publication and have always admired and appreciated your splendid courage and forceful arguments on all important questions affecting our national life.

You have set a high standard, and therefore have a great responsibility. I hope you may be sustained in your efforts by the spirit of God, and that right and justice will prevail always.

I have read the story of the Herrin massacre and the comments, and appreciate the seriousness of it all.

#### Let's Find the Cause and Change It.

F. M. BOONE Clarksdale, Miss.—Truer words were never written than those on your cover page of the 12th. The Illinois crime was symptomatic.

Then why write symposiums and waste printers' ink on said crime?

Remove the cause and the symptoms disappear.

In 1920 when the Reserve Board began its deflation policy, you were the first to yell "stop thief!" and you have made the greatest fight ever made by any man. Now you commence on the cause which produced the symptoms at Herrin and we will need no more symposiums on "The Crime of Illinois."

You are the best one I know to make the fight. Go to it!

#### Does Not Want to Miss a Copy.

R. GRAHAM CARTER, W. S. Carter Company, Long Leaf Yellow Pine Lumber, Brinson, Ga.—The writer does not want to miss a copy of your paper. We believe in the fairness that the MANUFACTURERS RECORD stands for. We have been reading with much interest the articles which have been appearing on the front page for the past few weeks. The lesson of such dastardly crimes as the Herrin massacre should be brought before the people. I am enclosing check which covers my subscription to the RECORD for another year. Thanking you for calling my attention to this matter, I am yours for a bigger and better magazine devoted to the upbuilding of a nation through the development of the garden spot of the world, Dixie Land.

#### A Fight to the Finish.

H. F. MOBLEY, The Mobley Bros., Co., Jefferson, Ga.—I appreciate the way you go after the great vital questions that affect us individually, as communities and nationally.

I think one of the greatest needs of today, to fight effectually the bootlegger and the liquor traffic, is to put good men in office, as sheriffs, city and county police, who are unequivocally opposed to the liquor business. We are suffering more right along this line right now than anywhere else. I hear that numbers of our sheriffs are lined up with these bootleggers, and are enriching their coffers while the going is good.

Can't you point out this "fly in the ointment" in a good strong editorial in some of your coming issues? Keep up the fight. Right will prevail in the finish.

**Chance for More Oil in Southwestern Texas.**

The search for oil in counties in Texas along the Rio Grande has been persistent and has been rewarded by some measure of success says the United States Geological Survey. Several wells have obtained showings of oil both from the cretaceous and the underlying carboniferous formations and some oil and gas fields of small output have been developed. The region is so vast, however, and the geologic conditions are so varied that the success attained appears insignificant. Enormous areas that must be classed as possibly oil-bearing have not been tested. Many of the wells have been drilled at places determined by the whim or the "hunch" of the operators, without reference to the geology; and their failure does not really show whether or not oil can be obtained in the region.

Most oil men now freely admit that the first prospecting for oil in any region should be confined to the anticlines—the arches of the beds—provided they can be discovered, continues the Survey bulletin, but in the plains along the Rio Grande anti-clines are not easily found, and the difficulty of finding them has doubtless been the cause of the failure of a large part of the prospecting. They are known to exist, however, and they can be found by a trained geologist. An anticline was discovered in the vicinity of Del Rio, Val Verde County, Tex., in the summer of 1921 by L. W. Stephenson, of the Geological Survey, who has given out recently a brief description of the geological conditions in that region.

**Southern Pine Sales Up Again.**

New Orleans, La., July 24—[Special.]—For the week ended Friday, July 21, lumber sales as reported by 128 mills of the Southern Pine Association totaled 3904 cars, representing 80,600,544 feet of lumber, and making an average per mill of 630,161 feet. This is the best showing on new orders for the past six weeks. The average order per mill for the week of July 14 was 554,717 feet.

Shipments during the week were 3680 cars amounting to 76,032,480 feet, while production amounted to 77,981,527 feet a slight increase over July 14.

Orders were 3.44 per cent above production and 6.09 per cent above shipments, which were 2.50 per cent below production for the week.

The decrease in "Orders on Hand" during the week amounted to 1.55 per cent.

The actual figures for the week are as follows:

	Cars.	Feet.
Orders on hand beginning of week.....	14,431	298,158,891
Orders received during week.....	3,904	80,600,544
Total .....	17,335	387,819,435
Shipments during week.....	3,680	76,032,480
Orders on hand end of week.....	14,655	302,786,955

**Bright Outlook for Lumber, Says Mr. Long.**

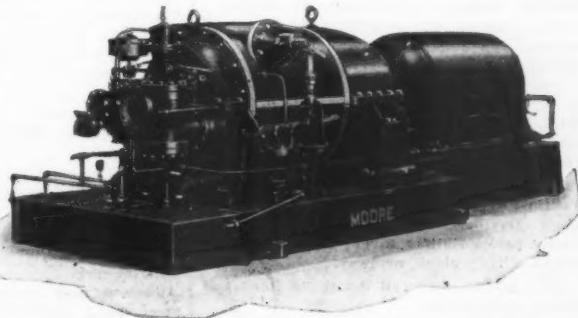
The outlook for the lumber industry is particularly bright according to R. A. Long, Chairman of the Board of the Long-Bell Lumber Company, Kansas City, Mo., who states that he has never seen a period when the permanent outlook for the industry was more promising. In a recent interview in that city, Mr. Long showed that underproduction during and since the war, and unusual demand for residential building in the past two or three years is responsible for the increased consumption.

"As a result of the restrictions against building for other than war purposes," Mr. Long continued, "practically all cities in this country were underhoused at the close of the war and are underhoused today. Since it would require some twelve years work at 25 per cent above normal to make up the countrywide housing shortage, it is clearly evident that the demand for lumber certainly should increase rather than fall off."

**MECHANICAL****Bleeder Turbine for Industrial Plants.**

The bleeder type turbine represented in the accompanying picture and which is manufactured by the Moore Steam Turbine Corporation, Wellsville, N. Y., has been perfected and placed on the market with a desire to decrease operating costs in industrial power plants of average size. It meets, it is remarked, a long felt want wherever steam after generating power is used for heating buildings, feed water for boilers, manufacturing, or for cooking, and also solves the problem of heat balance, acting as a reducing valve for converting high pressure steam into a lower desired pressure, meanwhile extracting the energy due to the heat drop.

"It is simple in design," say the builders, "easy to get at and automatically regulates perfectly, for either varying power conditions or fluctuating demands for exhaust steam. The efficiencies obtained have been exceedingly gratifying. One operator, for instance, who had bought outside power at \$600 per month, yet who had generated steam in his boilers at 125 pounds per square inch and reduced it to 40 pounds through a reducing valve, for cooking purposes, found that a Moore bleeder turbine could take the place of the reducing valve, generate his power requirements and fulfill his demand for exhaust steam. He saved \$600 per month, which in



VIEW OF TURBINE ON BLEEDER VALVE SIDE.

less than a year paid for the turbo-generator. There are doubtless many operators who could follow the same procedure, with resulting greater efficiencies and lower operating costs."

The general design of this new machine is that of a multistage turbine with one or two velocity stages followed by a number of pressure stages. Between the velocity stage and the pressure stage is the bleeder chamber which connects to the heating or the cooking system. The cylindrical bleeder valve allows excess steam to enter another chamber from which it flows through the pressure wheels to the condenser. An oil relay governor controls the turbine speed. A cylindrical bleeder valve controls the steam flow rate to the bleeder exhaust.

This turbine is built for initial pressures as low as 100 pounds per square inch and for bleeder pressures as high as 40 pounds per square inch.

**Tubize Company Buys DuPont Homes for \$225,000.**

The Tubize Artificial Silk Co. of Hopewell, Va., has purchased "B" Village from the DuPont Chemical Co. for \$225,000. The village contains 325 houses. It is understood that it will be occupied by employees of the Tubize Company.

# Construction Department

## EXPLANATORY.

The MANUFACTURERS RECORD seeks to verify and obtain additional information regarding all enterprises reported in its Construction Department, by direct daily correspondence. Further facts of news value are published later from telegraph, mail and representatives' reports. We appreciate having our attention called to errors that may occur.

## DAILY BULLETIN.

The Daily Bulletin of the MANUFACTURERS RECORD is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$20.00 per year.

### Bridges, Culverts and Viaducts.

**Ala., Demopolis** — State Highway Dept., Montgomery, Ala., let contract to Doullut & Williams, New Orleans, La., at \$220,000, for highway bridges and approaches over Tombigbee River, near Moscow Ferry 14 mi. below Demopolis; two 230 ft. fixed spans; 160-ft. Waddell type vertical lift; concrete approaches.

**Ala., Mobile** — Mobile County, Board of Revenue and Road Comms., will build creosoted timber bridge. For full detail see Mchy. Wanted—Bridge Construction.

**Ala., Tuskegee** — State Highway Dept., Montgomery, Ala., received bids for building bridge on road from Line Creek to Tuskegee, Macon County; W. D. Ownes, Pelahatchie, Miss., at \$59,507.11, low bidder.

**Fla., Miami** — City, will build concrete bridge. For full detail see Mchy. Wanted—Bridge Construction.

**Fla., Sanford** — Seminole County Comms., L. A. Brumley, Chrmn., let contract to Austin Bros. Bridge Co., Atlanta, Ga., at \$17,000, to build bridge across St. Johns River at Osteen Ferry, on Sanford-New Smyrna road.

**Fla., Seabreeze** — Seabreeze Bridge Co., P. D. Gold, Prest., let contract to C. A. Ballough, Daytona, Fla., at \$40,000, to build bridge across Halifax River; 20-ft. wide; palmetto piling; plank roadway.

**Ga., Athens** — For full detail see Road and Street Construction.

**Kentucky** — State Highway Comsn., Frankfort, Ky., let contract to Montgomery & Parker, Rockport, Ind., at \$8884.40, for following:

Graves County, reinforced concrete I-Beam superstructures and center piers on Mayfield-Murray road:

Stations:  
142 plus 30; two 20-ft. 3-in. spans  
400 plus 46; two 27-ft. spans.  
181 plus 57; 30-ft. span.  
313 plus 50; 30-ft. span.  
491 plus 12; 30-ft. span.  
648 plus 50; 21-ft. span; State Aid Project No. 9, Section C.

**Ky., Morganfield** — Union and Crittenden Counties, will build steel bridge. For full detail see Mchy. Wanted—Bridge Construction.

**La., Morgan City** — Louisiana State Highway Comsn., Raymond Bldg., Baton Rouge, La., and War Dept., plan building bridge at Morgan City over Atchafalaya River, to connect with Old Spanish Trail.

**Md., Baltimore** — Board of Awards, Wm. F. Broening, Prest., received bids to lay concrete floor on Bridge No. 2, over Gunpowder River, at Loch Raven; low bidder, Commonwealth Construction Co., Commonwealth Bank Bldg., at \$14,716.70.

**Missouri** — State Highway Dept., Jefferson City, Mo., will build 6 bridges. For full detail see Mchy. Wanted—Bridge Construction.

**Miss., Ellisville** — Jones County Court, will erect steel bridge. For full details see Mchy. Wanted—Bridge Construction.

**N. C., Monroe** — State Highway Comsn., Raleigh, N. C., let contract to Hagedorn Construction Co., Thomasville, N. C., at \$21,408.30, to build bridge over Richardson Creek, near Monroe, Union County State Project No. 694.

**Okl., Eufaula** — McIntosh County plans building 2 bridges:

over North Canadian River, at Oklahoma and McIntosh Counties line; \$25,000.

over North Canadian River on Jefferson Highway; votes Aug. 1 on \$285,000 bonds. Address County Comms.

**S. C., Anderson** — Anderson County Highway Comsn., W. A. Sanders, County Commr., let contract to Newell Contracting Co., Anderson, at \$10,180.34 for bridge on Honea Path-Kays Bridge road, between Honea Path and Saluda River; 33,861 lbs. steel reinforcement.

**Tex., Hempstead** — Waller County. For full detail see Mchy. Wanted—Bridge Construction.

**Tex., New Boston** — Bowie County. For full detail see Mchy. Wanted—Bridge Construction.

**Tex., Palestine** — Anderson County, H. L. Meyers, Chrmn., Good Roads Comm., plans building bridge over Trinity River between Anderson and Freestone Counties; 200-ft. steel span; \$119,500; Chas. R. Stewart, County Judge.

**West Virginia** — State Road Comsn., Charleston, W. Va., will build 17 bridges. For full detail see Mchy. Wanted—Bridge Construction.

**West Virginia** — Ritchie County Comms., plans building 2 concrete bridges as follows: at Mole Hill, Clay Dist.  
at Burnt House, near Ferrell's Store, Murphy Dist.

**W. Va., Huntington** — City, will build reinforced concrete bridge. For full detail see Mchy. Wanted—Bridge Construction.

**W. Va., Mannington** — City Comms., plan building 2 concrete bridges:

Across Pyles Fork, on Buffalo St.; 80-ft. span.

Across Clarksburg St.; three 40-ft. arches.

### Canning and Packing Plants.

**Fla., Citra** — Crosby-Wartmann Packing Co., E. L. Wartmann, Prest., will erect citrus packing plant; 70x130 ft.; install modern equipment; daily capacity 3 cars of fruit; have 200 acres under cultivation.

**Fla., Oneco** — Manatee County Growers Assn., I. T. Williams, Gen. Mgr., will construct packing plant; 40x80 ft.; corrugated iron.

**La., Empire** — M. P. Doullut of Louisiana

Navigation and Fisheries Co., will improve plant.

**La., New Orleans** — Foster Canning Co., purchased site at Price and will erect shrimp, oyster and crab canning plant; construct canal 1 mi. long and 60 ft. wide, leading to river; cost about \$30,000.

### Coal Mines and Coke Ovens.

**Ky., Letcher** — Apex Coal Co., Lynchburg Va., will construct tipple near Sergeant; develop new mines and extend plant.

**Mo., St. Louis** — Callahan Coal Co., capital \$10,000, incptd. by J. E. Callahan, H. C. Heyer, C. B. Schroeder.

**Tenn., Rosedale** — West Virginia Coal Co. Thos. Lockhart, Prest., 722 Hamilton Bank, Bldg., Chattanooga, will develop coal mines; daily capacity 100 tons. (Lately noted.)

**W. Va., Ellamore** — Kime Coal Co., capital \$250,000, incptd. by W. A. Ward, Otis Reinhard, E. G. Zauner, of Josephine.

**W. Va., Hornor** — Irving Coal Co., lately noted incptd. with \$50,000 capital, organized with Clyde A. Cole, Shinnston, Prest.; W. I. Booth, Clarksburg, Secy.; will develop mines with daily output of 3 cars.

**W. Va., Rainelle** — Snake Island Smokeless Coal Co., capital \$50,000, incptd. by J. H. Miles, S. P. Harris, J. L. Myles.

### Concrete and Cement Plants.

**Md., Baltimore** — Baltimore Concrete Products Co., Kate Ave., capital \$150,000, incptd. by Bernard W. Denson, Carter Denson, and Frank T. Kapp.

**Mo. Purcell** — E. B. Smith, Joplin, Mo., will construct plant to mfr. concrete blocks.

### Cotton Compresses and Gins.

**Miss., Crowder** — Crowder Gin Co., lately noted incptd. with \$20,000 capital, organized with Fred M. Darnell, Prest., Memphis, Tenn., let contract to T. C. Kyle of Crowder Mfg. & Supply Co., for erection of plant; cement and wood; daily output 30 to 35 bales; will install new mchy. (See Mchy. Wanted—Bagging and Ties.)

**Tex., Haskell** — Duncan Gin Co., capital \$6000, incptd. by W. A. Duncan, C. M. Francis, E. L. Williams.

**Tex., Pharr** — Hairley & Son Co., interested in establishing gin plant. (See Mchy. Wanted—Cotton Gin.)

### Cottonseed-Oil Mills.

**Tex., Stamford** — Rule-Jayton Cotton Oil Co., C. M. Francis, Gen. Mgr., will construct complete plant; ordinary construction; install oil mill mchy.; daily output 125 tons cotton seed products; bids opened Jan. 1st, 1923; cost \$100,000. (Lately noted.)

### Drainage Systems.

**Ky., Morganfield** — Board of Drainage Commissioners of Union County receives bids in about 6 weeks for construction of 11 mi. of open ditch work; approx. 300,000 cu. yds. earth excavation; floating dredge work; Norman R. Orcutt, Ch. Engr.

**Miss., Greenville** — For full details see Mchy. Wanted—Drainage.

**Mo., Trenton** — Grand River Drainage Dist. Comrs. of Grundy County let contract at \$225,000 to Fred M. Crane & Co., Omaha, Neb., for dredging; will construct six dams.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

August 3, 1922.

## MANUFACTURERS RECORD.

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**Electric Plants.**

Fla., Citra—Citra Ice, Light & Development Co., will construct electric plant furnish light and power for Citra and light and for Island Grove across Orange Lake, also furnish power for packing plant.

Fla., Homestead—For full details see Water Works.

Fla., Vero—City will enlarge electric light plant; votes Aug. 18 on \$40,000 bonds. Address The Mayor. (Lately noted.)

Ga., Ray City—City, L. F. Gildens, Mayor, let contract to McGraw & Co., Thomasville, for electric lights and water works system.

Ky., Whitesburg—Kentucky & West Virginia Power Co., Hazard, Ky., reported to extend transmission line through heart of Elkhorn coal fields to Pikeville, construct central station or power house at Pikeville; will also extend lines through Pond Creek and Williamson district to Spriggs and Logan, W. Va.

Md., Easton—For full details see Mchy. Wanted—Electric Light Plant Extension.

Mo., Sedalia—City contemplates constructing electric light plant; cost \$362,000. Address The Mayor.

N. C., Belhaven—City, J. E. Shepardson, Mayor, let contract at \$5565 for foundation and building for electric light plant to R. W. Lucas, Belhaven, and at \$17,432 to John R. Proctor, Bayonne, N. J., for engine and generator.

N. C., Pine Tops—For full details See Mchy. Wanted—Transmission Line.

S. C., Anderson—New Prospect Light Co., inceptd. by J. Boyce McClure, L. C. Bolt, H. S. Garrison.

Va., Montvale—Montvale-Thaxton Transmission Co., J. M. Stephens, Gen. Mgr., will construct 13 mi. 6600 volt transmission line connecting Thaxton and Montvale; cost about \$9000. (Lately noted.)

Va., Norfolk—For full detail see Mchy. Wanted—Electric Sub-station.

**Fertilizer Factories.**

Fla., Bradenton—Manatee County Fertilizer Co., capital \$25,000, inceptd. with J. H. Humphries, Prest.; I. T. Will'ams, V.-P.; H. O. Horney, Secy.

Md., Baltimore—Summers Fertilizer Co., 210 E. Redwood St., capital \$500,000, inceptd. by Willis R. Dresser, James E. Totman, Walter P. Summers.

**Flour, Feed and Meal Mills.**

Mo., Frankford—Frankford Elevator Co., capital \$20,000, inceptd. by L. S. Brown, D.

E. Dean, H. N. Thornton.

S. C., Rock Hill—Standard Milling Co., capital \$10,000, inceptd. with J. W. Jones, Prest.; G. S. Jones, Secy.

Ky., Ashland—Moore Feed & Seed Co., capital \$5000, inceptd. by Harry S. Moore, Watt M. Pritchard.

Ky., Lexington—Dunn Wheat Co., capital \$100,000, inceptd. by Jeff T., Jack H. Dunn, W. B. Maynard.

**Foundry and Machine Plants.**

Tex., Corsicana—American Well & Prospecting Co., will construct 50x100 ft. addition for pattern shop; McCleskey & Lenier, Supvrs.

Tex., Electra—For full details see Gas and Oil.

Tex., San Antonio—Oil Pumps—Johnson-Arthony Supply Co., changed name to Johnson Supply Co., increased capital to \$40,000.

**Gas and Oil Enterprises.**

Fla., St. Petersburg—For full details see Water Works.

Fla., St. Petersburg—Texas Refining Co., will erect gas and oil plant at Second Ave. and Eighth St.; cost \$29,000.

Md., Salisbury—Hearn Oil Co. of Wilmington, Del., Claude Hearn, Mgr., purchased site on Mill St. and will erect 2 large storage tanks having capacity of 25,000 gals.; cost about \$30,000.

Okla., Bristow—Sartain Oil & Gas Co., capital \$125,000, inceptd. by Robt. L. Sartain, Robt. C. and Jess Sartain of Okmulgee.

Okla., Chickasha—Little Nick Oil Co., capital \$120,000, inceptd. by B. P. Smith, J. W. Owings, O. L. Bingham.

Okla., Grandfield—Marshall Production Co., capital \$50,000, inceptd. by Alex Hamilton, E. A. Sterling, Hiles Hamilton.

Okla., Oklahoma City—Gray Bros. Oil Corp., capital \$50,000, inceptd. by R. R. C. and Florence Gray.

Okla., Tulsa—W. J. Miller Drilling Co., capital \$20,000, inceptd. by J. F. Smith, W. D. Abbott, M. C. Dudrow.

Okla., Tulsa—H. H. Reardon Drilling Co., capital \$20,000, inceptd. by J. F. Smith, W. D. Abbott, M. C. Dudrow.

Okla., Tulsa—Western Supply Co., increased capital to \$600,000.

Tenn., Memphis—Perkins Oil Co., capital \$125,000, inceptd. by W. H. Jasspan, R. W. Ashford, W. F. Houck.

Tex., Breckenridge—Foswell Supply Co., capital \$20,000, inceptd. by F. B. Foswell, C. V. Welch, V. B. Foster.

Tex., Dallas—Lone Star Gas Co., Dallas, Tex., will construct a 25 mi. 12-in. pipe line

from Dixie Junction, Okla., to Robert Field; cost about \$200,000.

Tex., Dallas—Howard Petrol Co., capital \$25,000, inceptd. by E. J. Power, W. S. Dowling, J. C. Reed.

Tex., Dallas—Gilbert Co., capital \$20,000, inceptd. by W. J. Moroney, T. F. Rodgers, R. F. Rodgers.

Tex., Electra—Magnolia Petroleum Co., Dallas, Tex., will expend \$250,000 in improvements for central repair and machine shops; steel frame construction; tract 500x1000 ft. will be enclosed by wire steel fence, with concrete driveway 40 ft. wide; included in list of buildings are the following: warehouse 65x175 ft.; machine shop, 40x112 ft.; forge house, 140x60 ft.; boiler shop, 40x80 ft.; garage and storage warehouse, 26x180 ft.; automobile repair shops, 40x40 ft.; ice plant with daily capacity of 2000 tons ice; and office building.

Tex., Fort Worth—Pacific & Gulf Oil Co., inceptd. by J. B. Ross, R. M. Neville, L. J. Wardlaw.

Tex., Houston—Globe Petroleum Co. of Houston, capital \$40,000, inceptd. by S. A. Brown, G. B. Lewis.

Tex., Humble—Peruvian Oil Co., capital \$500,000, inceptd. by J. A. Hoppes, J. Ross, son, both of Humble, A. Lee Griffin, Houston.

Tex., Ranger—Texas Pacific Coal & Oil Co. will construct gas absorption plant near Caddo; cost \$100,000.

**Hydro-Electric Plants.**

Mo., Branson—Empire Dist. Electric Co. applied for permission to Federal Power Comsn. for authority to construct hydroelectric plant on White and James Rivers above Branson; dam 175 ft. high; to produce from 40,000 to 80,000 H.P.; will also construct electric line from dam to Joplin, Mo.

Okla., Muskogee—Oklahoma Gas & Electric Co. will erect \$2,000,000 power plant on Arkansas River, 4 mi. northeast of Muskogee; George Pythian will superintendent construction work; H. W. Graeber in charge of transmission lines which will extend from new power plant to Fort Smith. (Lately noted.)

Tenn., Erwin—For full details see Textile Mills.

**Ice and Cold-Storage Plants.**

Fla., Citra—Citra Ice, Light & Development Co., will install ice and cold storage plant with daily capacity of 10,000 lbs.

Fla., Clermont—O. K. Ice Co., F. B. Krieger, Mgr., lately noted to erect ice and cold storage building, mill construction, opens

## OPPORTUNITIES FOR NEW BUSINESS

THROUGH THE

**DAILY BULLETIN**

Manufacturers of Machinery and Equipment, Dealers in Railroad and Contractors' Supplies, as well as Architects, Contractors and Builders, find it very profitable to follow up the advance news furnished through our **DAILY BULLETIN** EVERY BUSINESS DAY IN THE YEAR. It is an authoritative, prompt source of information concerning every industrial and railroad undertaking of any consequence, and likewise all important building operations and municipal improvements in the whole South. The opportunity of getting in correspondence with firms that are in the market is afforded by a daily perusal of its columns.

MANUFACTURERS RECORD

BALTIMORE, MD.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

bids Aug. 30 to install storage room, freezing tank, refrigerating machine, oil engine or motors; capacity 10 tons ice with oversize tanks. (See Mch. Wanted—Ice Plant Equipment; Engine (oil); Motor.)

Tex., Electra—For full details see Gas and Oil.

W. Va., Williamson—Amicon Fruit Co. of Columbus, let contract to Good Construction Co. for erection of cold storage plant; 3 story and basement; brick, concrete and steel; capacity of 40 carloads fruits and vegetables.

### Land Developments.

Fla., Leesburg—E. M. Mote has 116 acres on Treasure Island in center of Lake Griffin, 55 acres under cultivation; purchased 1250 banana plants and will develop part of property as banana plantation.

Fla., Miami—Dixie Home Building Co., capital \$10,000, inceptd. with James J. Horisk, Prest.; Charles H. Bancroft, Secy.

Fla., Sanford—Sanford Investment Co., capital \$150,000, inceptd. with John Meisch, Prest.; A. P. Connelly, Secy.

Fla., St. Petersburg—Florida-Caroline Estates Corp., capital \$30,000, inceptd. with Thomas J. Rowe, Prest.; H. Walter Fuller V.-P.; Gladys L. Richardson, Secy.

Ga., Vidalia—Pecan Plantation Co., capital \$250,000, J. E. Brewton, Prest., has 1000 acres, will develop pecan plantation.

Ky., Louisville—Mutual Realty Co., increased capital to \$100,000.

Ky., Okolona, R. Sta. Louisville—Okolona Home Building Co., capital \$10,000, inceptd. by D. A. Bates, H. G. Skiles, C. P. Brooks.

Ky., Whitesburg—Daniel Boone Realty Co., capital \$125,000, inceptd. by Stephen P. Combs, C. H. Back, J. S. Fairchild.

Md., Baltimore—Oakford Park Apartment & Land Co., 309 Union Trust Bldg., capital \$200,000, inceptd. by Jesse Rosenfeld, Robt. S. Weisenfeld, Marion B. Freeman.

Md., Bethesda—Egg-A-Day Farm, capital \$25,000, inceptd. by I. Brooks Clarke, Neyle Colquitt, C. Griscom Randle.

Mo., Little Blue—White Hill Farms Co., lately noted inceptd. with \$150,000 capital, Wm. Shands, Prest.; has 37 acres, will develop. (See Mch. Wanted—Incubators; Fencing; Roofing, etc.)

Mo., St. Louis—Wulffing Realty Co., capital \$60,000, inceptd. by J. M. Wulffing, F. H. Wulffing, R. O. Meyer.

Mo., St. Louis—Triple Investment Co., capital \$6000, inceptd. by S. Simon, S. Stein, G. W. Stein.

Mo., St. Louis—Pascola Farms Co., Emmet Watson, Prest., lately noted inceptd., has 268 acres; will develop for truck and berry farms; approx. cost \$75,000.

N. C., Charlotte—Tremont Realty Co., capital \$10,000, inceptd. by F. H. Daniel, W. L. Jenkins, C. A. Mullis.

Oka., Stigler—Stark Bros., Louisiana, Mo., Major Alfred Stark, Prest., purchased 200 acres of land; will establish fruit nursery; cost approx. \$20,000.

S. C., Columbia—Barnwell Orchards, capital \$30,000, inceptd. with Angus H. Macaulay, Prest.; J. H. Lee, Secy.

S. C., Greenville—The Realty Development Co., inceptd. with Jones McCrorey, Prest.; H. B. Bates, V.-P.; J. Hudson Williams, Secy.

Tex., El Paso—City will extend Memorial Park. Address The Mayor.

Va., Norfolk—Green Lawn Cemetery Corp., capital \$10,000, inceptd. by James S. Barron, Prest.; Llewellyn Whitehurst, Secy.

Va., Roanoke—Roanoke Building Corp., cap-

ital \$25,000, inceptd. with Robt. M. Allen, Prest.; M. H. Wason, Secy.

W. Va., Wheeling—Muscle Shoals Realty Co., capital \$50,000, inceptd. by Max Schaefer, R. M. Deutner, C. G. Bachman.

### Lumber Manufacturing.

Ala., Andalusia—Hayes Lumber Co., capital \$10,000, inceptd. by W. F. Simmons, T. J. Hayes, M. F. Simmons.

Fla., Bradenton—Duman Lumber Co., capital \$50,000, inceptd. with G. E. Duman, Prest.; W. F. Graves, V.-P.; Sam Sawyer, Secy.

Ky., Calhoun—Calhoun Lumber & Milling Co., capital \$15,000, inceptd. by Walter G. Houghland, Evansville, Ind.; Ashton Bryant, G. H. Gary.

Md., Baltimore—Woodmere Lumber Co., 13th floor, Maryland Casualty Bldg., capital \$200,200, inceptd. by Emos S. Stockbridge, Roland H. Brady, Wm. Lentz.

Md., Port Deposit—Woodlawn Lumber Co., capital \$50,000, inceptd. by Geo. E. Tyson, Carroll E. Tyson, both of Port Deposit, Wm. L. Hewes, Wilmington, Del.; Cress A. Beamer, North East, Md.

Miss., Grenada—Geo. C. Brown Lumber Co. will erect saw milling plant for working timber holdings on Yalobusha River.

Miss., Jackson—Fetterman Lumber Co., capital \$15,000, inceptd. by J. M. Fetterman, W. C. Wells, D. C. Fetterman.

S. C., Bennettsville—Schofield Bros., Phila., Pa., have taken over the Scott Lumber Co.'s plant at Ayers; will improve and operate.

W. Va., Charleston—F. Lory & Sons will rebuild planing mill lately burned.

### Metal-Working Plants.

Fla., Miami—Gorlov Heater Co., capital \$20,000, inceptd. with R. H. Urle, Prest.; Svend Gorlov, V.-P.; C. C. Small, Secy.

Md., Baltimore—Bull Dog Lock Washer Co. increased capital to \$225,000.

Md., Baltimore—Springs—Reliance Mfg. Co., 318 N. Front St., capital \$50,000, inceptd. by Joshua F. Stocksdale, Charles Holm, Joseph P. Welsh.

Mo., Kansas City—Car Brakes, etc.—Duff Crane Mfg. Co., capital \$100,000, inceptd. by J. H. Duff, C. H. Hanson, S. B. Crane.

Mo., Springfield—Perfection Weatherstrip Co., inceptd. by C. W. Russell, H. C. Bush.

Mo., St. Louis—Northwestern Mall Box Co., capital \$50,000, inceptd. by C. W. Palmer, Sidney Weiss, Arnold Loewenstein.

Mo., St. Louis—Welding—St. Louis Electric Welding Co., 2801 LaSalle St., lately noted inceptd., T. A. Oberchellman, Secy., has plant and will install high speed, muffle and carburizing furnaces and electric welders.

### Mining.

Mo., El Dorado Springs—Zinc, etc.—El Dorado Springs Development Co., capital \$300,000, inceptd. by A. B. Stricklett, Wm. True, M. A. O'Connor.

Mo., St. Louis—Hawk Point Mining Co., inceptd. by Ben Kolbenschlag, L. H. Rickert, G. W. Reid.

N. C., Penland—New Era Mica Co., capital \$10,000, inceptd. by John V. Cox, Paul Willis.

Tenn., Nashville—Belton Mining Co., capital \$50,000, inceptd. by J. W. Handley, J. A. Dale, T. D. Webb.

### Miscellaneous Construction.

Ark., Garland City—For full details see Mch. Wanted—Levee Construction.

Fla., Port Tampa City—For full details see Mch. Wanted—Seawall Construction.

La., Duckport—Levee—State Board of Engineers, invites bids to construct levee on right bank of Mississippi River; approx. 260,000 cu. yds. of earth.

La., New Orleans—Orleans Levee Board authorized Prest. Frank C. Hyne to call for bids for construction of levee at Stanton Plantation; approx. 165,000 cu. yds.; let contract at \$15,000 to P. M. Adema for raising Orleans Plantation levee approx. 2½ ft.

La., New Orleans—Levee—For full details see Mch. Wanted—Levee Construction.

La., New Orleans—Orleans Levee Board, Frank C. Hyne, Prest., let contract at \$15,000 to P. M. Adema for raising Orleans Plantation Levee, approx. 2½ ft.

Miss., Greenville—For full details see Mch. Wanted—Levee Work.

Mo., Benton—Levee—Scott County Levee Dist. No. 2 voted \$70,000 bonds for improvements to levee; 60 ft. standard type; cost approx. \$210,000 of which \$140,000 will be Federal appropriation.

Mo., Kansas City—Memorial Board receives bids Aug. 17 for improvements to Thomas H. Swope Memorial; construct semi-circular basin, 20 ft. in diam. front of which is rectangular in form, 20 ft. across; in centre will be granite fountain, urn shaped, 6 ft. high; balustrade of white Bethel marble; plans by Wright and Wright.

Tenn., Memphis—Levee—For full detail see Mch. Wanted—Levee Work.

Tex., Fort Worth—Board of Park Commrs., Geo. C. Clarke, Supt., will construct swimming pools in Marine and in Sycamore Park.

Tex., Galveston—Sand Catching Groin—G. K. Jorgenson let contract to August Gustafson, for constructing 500 ft. groin into gulf at foot of 24th St.; contract for delivering piling and other materials let to Hanson & Sons; work under supervision of C. C. Washington, County Engr.

Tex., Orange—Wharf and Docks—Wharf and Dock Board let contract at \$221,000 to Houston Construction Co., for additional units to municipal wharves; contract includes extension of wharf apron about 1008 ft.; construction of 2 roofed sheds, 400x90 ft. each; extension of municipal racks for distance of 1000 ft., and about 100 ft. of open platform with brick firewall between; construction work will be on wooden piling; sheds of metal construction, except floors; plans by C. H. Page & Bro., Archts., Austin, specifications prepared by C. E. Simpson, Civil Engr., San Antonio.

### Miscellaneous Enterprises.

Ala., Birmingham—Alabama Dairy Farms Co., capital \$15,000, inceptd. by Erle H. Achwantes, Gus. G. Argyros, Spiro Antos.

Fla., Homestead—Fire Equipment—For full detail see Water Works.

Fla., Jacksonville—E. V. G. Scranton Motion Picture Film Co., capital \$30,000, inceptd. with E. V. Scranton, Prest.; C. W. Brantley, V.-P.; J. H. McManus, Secy.

Fla., Miami—Incinerator—City Comms., let contract to Nye Odorless Crematory Co., Macon, Ga., to construct incinerator; 41x67 ft.; reline furnaces and increase capacity of present crematory; cost \$36,000.

Fla., Orlando—Dairy—B. C. Datson & Sons purchased additional land and will increase dairy capacity.

Fla., Orlando—Incinerator—City, Preston Ayres, Commr., has plans and will soon call for bids for construction of incinerator; \$25,000 available.

Ky., Louisville—Printing—American Print-

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

August 3, 1922.

## MANUFACTURERS RECORD.

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Md., Baltimore—National Advertisers, 1309 Maryland Ave., capital \$25,000, incptd. by Maurice R. Oppenheim, Harry W. Baller, Ira M. Lippel.

Md., Baltimore—American Bottling Co., 801-3 Whatcoat St., capital \$10,000, incptd. by Reginald Gardner, Allison D. Johnson, Wm. C. Lewis.

Md., Baltimore—Salt—Albrecht-Herd Co., Equitable Bldg. increased capital to \$300,000.

Miss., Columbus—Publishing—Columbus Dispatch Publishing Co., capital \$20,000, incptd. by V. B. Imes, L. Marx.

Mo., Kansas City—Straton & Jenkins Hauling Co., capital \$20,000, incptd. by Walter Straton, C. F. Jenkins, C. E. Sowers.

Mo., Richmond—Ray County Live stock Pavilion, capital \$18,000, incptd. by C. E. Dawson, C. E. Crispin, T. B. Fowler.

Mo., Springfield—Publishing—Farm Club News Publishing Co., 237 St. Louis St., lately noted incptd. with \$200,000 capital, organized with Walter Wadsworth, Prest., has plant and will open bids in about 90 days for printing mchly. to cost about \$15,000. (See Mchly. Wanted—Printing Equipment.)

Mo., St. Louis—Engineering—O'Toole Engineering & Construction Co., capital \$5000, incptd. by J. P. O'Toole, J. S. Buchanan, M. W. Meyer.

N. C., Henderson—Vance Plumbing & Electric Co., capital \$20,000, incptd. by E. C. Hunt, A. H. Ernst, R. H. Wilson.

N. C., Henderson—Daniel Hardware Co., capital \$25,000, incptd. by G. W. Dunkley, F. M. Dorsey, D. P. McDuffee.

Okla., Bristow—French 'leaning & Tailoring Co., capital \$15,000, incptd. by Geo. W. Cunningham, Elmer L. Newport, both of Bristow, Wm. H. Stricker, Sand Springs.

S. C., Eastover—Home Maid Products Co., capital \$15,000, incptd. with F. G. Auld, Prest.; L. L. Rose, Secy.

S. C., Lake City—Farmer's Hardware Co., capital \$20,000, incptd. with Joseph Schenk, Prest.; C. G. Griffith, V.-P.

Tenn., Memphis—Romac Waste & Linter Co., capital \$25,000, incptd. by E. M. Corbett, Luther McCallum, F. W. Lange.

Tenn., Memphis—Mechanical Development Co., capital \$10,000, incptd. by Geo. Joyner, W. D. Browning, R. L. Tolson.

Tex., Breckenridge—Pasteurizing—L. M. Gandy will construct pasteurizing plant; daily capacity 750 gal. milk.

Tex., Fort Worth—Amusement—City and Southwestern Traction Co., W. P. Welty, Secy., interested in development of 500 acres for park. (See Mchly. Wanted—Amusements.)

Tex., San Antonio—Publishing—Texas Republic, capital \$15,000, incptd. by G. K. Shearer, F. M. Allen, M. M. Hanson.

Tex., Victoria—Farm Bureau Sweet Potato Growers Assn. plans to erect sweet potato curing plant.

Va., Danville—Publishing—J. L. Crouse has contract to erect James Building to contain Danville Register and other offices; 3 stories; fireproof; metal windows, doors and furnishings; cost about \$100,000.

W. Va., Huntington—Huntington Sanitary Market Co., capital \$100,000, incptd. by W. I. Campbell, F. H. Dickey, F. M. Hawkins.

W. Va., Hurricane—Kirtley Foundation Amusement Co., W. H. Kirtley, Prest., will develop Midway Plaisance for amusement park; ten acres; construct \$4000 swimming pool, 40x90 ft.; supplied with salt water from well, equipped with circulating pump;

contract for excavating work and cementing of pool let to C. E. Ellis; construct dancing pavilion, 30x50 ft.; dining hall, etc., contract for building let to T. S. Saunders; about \$25,000 to be expended.

W. Va., Mullens—Guyan Hotel Co., capital \$25,000, incptd. by J. C. Sullivan, B. G. Scott, J. B. Frank.

## Miscellaneous Factories.

Ala., Birmingham—Toilet Articles—Red Seal Corp., capital \$11,500, incptd. by Wythe D. Sims, Dave Goldstein and others.

Ala., Sylacauga—Slate—J. D. McCartney, reported interested in establishing slate roofing plant.

Fla., Jacksonville—Standard Radio Sales Co., capital \$10,000, incptd. by H. M. Duval, Prest.; M. B. Crigler, V.-P.; R. D. Crawley, Secy.

Fla., Tallahassee—Confectionery—Isis-Olympia Confectionery Co., capital \$17,500, incptd. with S. Griffin, Prest.; Charlie Polizo, V.-P.; Angelo Griffin, Secy.

Fla., Tampa—Radio Corp., incptd. with Jack Landon, Prest.; L. P. Dickie, V.-P.; W. D. Bailey, Secy.

Ga., Savannah—Creamery—Savannah Cooperative Creamery, Gratz Dent, County Agt., has plans by Henrik Wallin for creamery, lately noted; Sun-light construction; outside porcelain lined with cork board insulation and fused glass inside equipment; install combined churn and worker to produce 1000 lbs. of butter at each churning; club rooms and hall, kitchen, etc.; cost \$45,000; plant will be constructed for use of Angell paper container to replace glass bottles.

Ky., Lewisburg—Elk Brand Shirt & Overall Co., increased capital to \$100,000.

Ky., Louisville—Chemical—Barker-Briggs Chemical Co., capital \$25,000, incptd. by Daniel Briggs, Rowland A. Berker, Herbert F. Boehl.

Ky., Louisville—Candy—Peal Candy Co., increased capital to \$20,000.

Ky., Louisville—Rugs—Carroll-Rogars Co., increased capital to \$65,000.

La., New Orleans—Pure Motor Oil System, capital \$1,000,000, incptd. by J. A. Chambers, L. G. Patterson, both of New Orleans, E. Wayless Brown, Shreveport.

La., Swartz, P. O. Doss—Standard Carbon Co., let contract to Hopper Construction Co., Pittsburgh, Pa., to construct gasoline extraction plant; cost \$75,000.

Md., Baltimore—Candy—Voneiff-Drayer Co., 1604 Harford Ave., increased capital to \$100,000.

Md., Baltimore—Monumental Awning & Tent Co., 702 N. Eutaw St., capital \$50,000, incptd. by Wm. B. Starkloff, Wm. J. Loeber, Wm. G. Roberts.

Md., Baltimore—Lubricating Oils—Schwartz Bros., 309 E. Centre St., capital \$25,000, incptd. by Israel, Max L. and Louis A. Schwartz.

Md., Baltimore—Bakery—L. C. Schneider, Baker St. near Warwick Ave., let contract to Consolidated Engineering Co., Calvert Bldg., for erection of bakery; 2-story; brick and reinforced concrete; steel frames; 140x180 ft.; cost \$100,000.

Md., Baltimore—Toys, etc.—American Products Corp., 1010 Keyser Bldg., capital \$500,000, incptd. by Elsie E. Hoch, Fannie Braris, L. Ruth Athley.

Md., Baltimore—Shirts—Knothe Bros., has plans by O. B. Wight, Munsey Bldg., for addition and alterations to plant at Hickory Ave. and 36th St.; present building will have additional story added; new building to be 2-story; 37x60 ft.; following contractors have

been asked to submit bids for construction: B. F. Bennett Building Co., 123 S. Howard St.; M. C. Davis & Sons, 902 W. 36th St.; Cogswell-Koether, 406 Park Ave., Consolidated Engineering Co., Calvert Bldg.; West Construction Co., American Bldg.; M. A. Long Co., 2016 W. North Ave.

Md., Baltimore—Clothing—Forrester Tailoring Co., N.W. Cor. Baltimore and Hanover Sts., capital \$100,000, incptd. by Willis M. Durdung, James E. Forrester, Wm. Deal Roycroft.

Miss., Hattiesburg—Pine Oils—Hattiesburg Pine Oils Co., will construct plant; steel mill construction; cost approx. \$180,000; daily output, wood turpentine, pine oil, tar, rosin oils, etc.; will install two 100 H.P. boilers; two 52 ft. retorts; one 100 H.P. engine, various steam pumps for water and oils; turpentine and oil refining equipment. Paul S. West, Construction Engr. (See Mchly. Wanted—Still.)

Mo., St. Louis—Surety Pharmaceutical Co., incptd. by Mike Arendes, Jr., Harry Vogt, Dr. J. P. Ghio.

Mo., St. Louis—Radio—Van Ashe Radio Co., capital \$6000, incptd. by W. W. Van Sickles, Walter Ashe, G. W. Van Sickles.

Mo., Springfield—Baking—Domino Baking Co., capital \$20,000, incptd. by Domino and B. A. Danzero, Roy Bishop.

N. C., Asheville—Cereal—D. Sam Cox, Prest. of American Business Co. of Raleigh, purchased controlling interest in Biltmore Wheat Hearts Co.; will improve plant increasing capacity to 10,000 packages cereals daily.

Okla., Dewey—Co-operative Rubber Co., let contract for factory; construction begun.

Okla., Oklahoma City—Stropper—Tompson Universal Stropper Corp., capital \$150,000, incptd. by J. W. Tompson, M. A. Tompson, both of Oklahoma City, G. H. Tompson, Kansas City, Mo.

Okla., Tulsa—Charles Miller Clothing Co., capital \$10,000, incptd. by F. & Chas. Miller, David Hill.

Tenn., Johnson City—Overalls—Metcalf Calf Skin Overall Co., will establish factory. Address Chamber of Commerce.

Tenn., Memphis—Candy—Ukaneat Co., increased capital to \$50,000.

Tex., Beaumont—Medicine—Hobo Medicine Co., capital \$50,000, incptd. by O. B. Sawyer, D. C. Proctor, J. A. Sparkman.

Tex., Fort Worth—Panther City Envelope Co., incptd. by C. F. Barham, Jr., Edwin B. Barham, C. A. Hudson.

Tex., Houston—Paint—Bradford-Brown Paint Co. increased capital to \$60,000.

Tex., Houston—Nut Shelling—Houston Nut & Products Co., capital \$20,000, incptd. with I. Schwartz, Prest.; E. Schwartz, Secy.; will construct nut shelling plant; two 1-story buildings; one 50x110 ft. and other 25x35 ft.

Va., Danville—Tobacco—W. T. Hughes & Co., capital \$250,000, incptd. with W. T. Hughes, Prest.; M. L. T. Hughes, Secy.

Va., Norfolk—Clothing—B. H. Kaufman, Inc., capital \$5000, incptd. with B. H. Kaufman, Prest.; Theresa Abrams, Secy., both of New York.

Va., Pocohontas—Soft Drinks—Stupalsky & Cummings, capital \$25,000, incptd. with E. G. Cummings, Prest.; John A. Stupalsky, Secy.

Va., Charleston—Edgewood Water Co., capital \$25,000, incptd. by G. S. Plumley, Duke W. Hill, Daniel Matthews.

Va., Martinsburg—Worthington-Reinhart Drug Co., capital \$50,000, incptd. by W. J. Worthington, G. P. Morrison.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

W. Va., Weston—Bakery—Home Bakery, Joseph Glassy, Propr. let contract for addition to bakery; will install 3x16 ft. oven.

### **Motor Cars, Garages, Tires, Etc.**

Fla., Eustis—Smoak & Goan let contract to C. Z. Osborn, Umatilla, Fla., for repair shop, lately noted; 59½x100 ft.; brick.

Fla., Miami—Ryan & Knight, Inc., S. A. Ryan, Prest., 214 W. Flagler St., let contract to Jno. Bullen, for building; 100x100 ft.; 3-story; fireproof, steel and concrete; show room 100x35 ft.; will install \$5000 service equipment.

Fla., Orlando—Flower-McKenney Co., capital \$50,000, incptd. with C. M. McKenney, Prest.; W. E. Flower, V.-P.; R. T. Tucker, Secy.

Fla., Sanford—San Juan Garage Co., capital \$25,000, incptd. with L. B. Fort, Prest.; W. D. Rogers, V.-P.; LeRoy B. Giles, Secy.

Ky., Louisville—Universal Car Co., W. C. Martin, Prest., will erect sales and service building at 25th St. and Broadway; 100x225 ft.; front 2-story, rear 1-story; cost about \$60,000; plans by Thomas J. Nolan.

La., Lake Charles—I. C. Carter let contract to Babin & Ladiner for construction of garage at Ryan and Church Sts.; 50x100 ft.; brick; cost \$6000.

Md., Baltimore—Franklin Motor Car Co., let contract to Consolidated Engineering Co., Calvert Bldg., for service station at 1107-09 Maryland Ave.; 2-story; brick and steel; cost about \$35,000; plans by Otto G. Simonson, Inc., Maryland Casualty Bldg.

Md., Chesapeake Beach—Chesapeake Beach Transit Co., capital \$5000, incptd. by John E. Donald, Herbert Herschberger, Frederick Mayer.

Mo., Marshall—Orrison McArthur Motor Co., capital \$50,000, incptd. by P. H. Orrison, W. E. Anderson, O. H. McArthur.

Okl., Enid—Corbett Walkover Tractor Co., capital \$25,000, incptd. by S. T. Corbett, B. F. Lewis, J. M. Dale.

S. C., Sumter—Sumter Buick Co., capital \$5000, incptd. with D. R. Plowden, Prest.; S. K. Nash, V.-P. and Secy.

Tenn., Knoxville—Gen. L. D. Tyson will erect building at North Gay, Fifth Ave. and Williams St. to be occupied by Eighty Four Tire Co., 58x146 ft. x85 ft.; 1 story; concrete stucco; red tapestry brick; green tile roof; cost \$18,000.

Tenn., Memphis—Interstate Automobile & Supply Co., capital \$200,000, incptd. with W. L. Kettlewell, Prest.; A. Jerome Harris, V.-P.; C. R. Beall, Secy.; will erect building on Union Ave.; Maghan & Broadwell, Archt.

Tex., Electra—For full detail see Gas and Oil.

Tex., San Antonio—Orsinger Motor Co., increased capital to \$15,000.

W. Va., Parkersburg—Cunningham Auto Co., capital \$25,000, incptd. by C. R. Cunningham, C. W. Coffman, D. H. Justus.

### **Railways.**

La., West Monroe—W. Lee Morgan is reported saying that construction of an extension of the railroad in which the associates are interested will begin immediately, to be completed within a few months.

Okla., Altus—Missouri, Kansas & Texas Railroad Co., in new charter filed, proposes to build a line from Altus to Oklahoma City, about 125 mi. C. E. Schall is Prest.; and F. Ringer, Ch. Engr., at St. Louis, Mo.

### **Road and Street Construction.**

Alabama—State Highway Dept., Montgomery, Ala., received bids for following:

Macon County, 20.488 mi. gravel road from Line Creek to Tuskegee; Vaughn-Davis Construction Co., Montgomery, at \$157,897.98; low bidder.

Cleburne County, 3.48 mi. chert road, on Heflin-Annisonton road; Stanley & Singer Construction Co., Lafayette, Ala., at \$25,506.93, low bidder.

Limestone County, 14.6 mi. from Athens toward Muscle Shoals; E. L. Baston, Birmingham, Ala., at \$157,056.31 for gravel, and \$321,653.71 for bituminous macadam, low bidder.

Ala., Guntersville—City. For full detail see Mchy. Wanted—Paving.

Ala., Hamilton—State Highway Dept., Montgomery, Ala., received bids for 18.754 mi. road from Guin to Walker County line; low bidder. Smith Co., Birmingham, Ala., at \$276,421.27.

Ala., Mobile—City plans resurfacing Water, Government and Royal Sts.; asphaltic concrete. Address The Mayor.

Ark., Little Rock—Board of Commrs., Street Improvement Dist. No. 315, S. L. White, Attorney, 827 Southern Trust Bldg., will improve streets in Dist.; bituminous top; concrete base; bids opened July 31; Hugh R. Carter, Engr., 313 Exchange Bank Bldg.

Ark., Paragould—Greene County contemplates laying 8 mi. gravel road from city to Hopkins' Bridge; \$40,000; address County Commrs.

Fla., Dade City—Pasco County will improve 33 mi. road from Dade City to Gulf Coast, through San Antonio, Pasco and Flavay Junction; voted \$500,000 bonds. Address County Commrs.

Fla., Gainesville—City. For full detail see Mchy. Wanted—Paving.

Fla., Homestead—For full details see Water Works.

Fla., Jacksonville—Duval County Commrs., plans following:

Myrtle Ave. 740 ft. road; 50-ft. right of way.

O'Connor road, 7496.7 ft. road, 66-ft. right of way.

Thomas road, 17,239-ft. road, 66-ft. right of way.

Fla., Miami—F. H. Wharton, City Mgr., let contract to Maule Paving Co., Miami, at \$38,947.83, to lay 24,683 sq. yds. concrete sidewalks; and to John J. Quinn & Co., Miami, at \$281,357.54, for 170,819 sq. yds. bituminous macadam pavement.

Fla., Pensacola—Board of Commrs., John E. Frenkel, City Clk. will grade, pave and curb portions of Intendencia, La Rua, Barcelona, Strong Sts., 14th Ave., etc.; bids opened July 31; Frank Jarrett, City Engr.

Fla., St. Augustine—State Road Dept., Tallahassee, Fla., plans repairing St. Augustine road from Duval County line to Bunnell.

Fla., St. Petersburg—For full details see Water Works.

Fla., Sanford—Seminole County Commrs., L. A. Brumley, Chrmn., let contract to re-surface 181,000 sq. yds. macadam, and 45,450 sq. yds. brick roads in County.

Fla., Seabreeze—Seabreeze Bridge Co., P. D. Gold, Prest., let contract to C. A. Ballough, Daytona, Fla., for roadways to connect with Dixie Highway and Fairview Ave.

Fla., Tampa—Hillsborough County Commrs. plans paving Buffalo Ave.

Fla., Athens—Clarke County Commrs. plan paving Lumpkin St. from Shelnut's to Millidge Ave.; 1000 tons crushed stone; 1400 bbls. cement.

Fla., Athens—City and Clarke County will pave street from city limits to River St. bridge; grade Madison Ave. hill road; erect

bridge across river. Address Mayor, or County Commrs.

Ga., Athens—Clarke County plans completing following:

1.7 mi. Danielsville road, beyond city limits; 2 mi. Jefferson road, beyond city limits; \$25,000 for each asked from Federal Aid.

Ga., Augusta—City, Streets and Drainage Committee, will lay 1600 sq. yds. pavement, 1400 lin. ft. granite curbing, 50 lin. ft. marginal curbing, on Arsenal Ave., from Central Ave. to McDowell St.; bids opened July 27; W. H. Wise, City Engr. and Commr. of Public Works.

Ga., Savannah—City let contract to Houston Engineering Co., to pave Abercorn and Habersham Sts. from Oglethorpe Ave. to Liberty St.; asphalt top on old brick foundation. Address The Mayor.

Kentucky—State Highway Coman., Frankfort, Ky., let contracts to Eaton Oil Works, Covington, Ky., for following State Project Improvements:

No. 29, Section B—Estill County, 3.57 mi. Irvine-Richmond road from West Irvine to Station plus 80; bituminous treatment.

No. 29, Section A—Madison County, 5 mi. Richmond-Irvine road, from Station O plus 00 to Station 284; bituminous surface treatment.

No. 32, Section B—Montgomery County, 7.64 mi. Paris-Mt. Sterling road from Bourbon County line to Mt. Sterling-Sharpsburg road; bituminous surface treatment. to Southern Oil & Tar Co., Louisville, Ky., for following:

No. 44, Section D—Anderson County, 4.07 mi. Bloomfield road from city limits of Lawrenceburg to McBriar road; bituminous surface treatment.

No. 5, Section K—Madison County, 4.67 mi. Richmond-Winchester road, from Kentucky River to Sta. 246 plus 57; bituminous surface treatment.

to R. B. Tyler & Co., Louisville, Ky., for:

No. 26, Section B—Woodford County, 4 mi. Versailles-Harrodsburg from city limits of Versailles to 4 mi. south in County; bituminous surface treatment.

Ky., Ashland—City. For full detail see Mchy. Wanted—Paving.

Ky., Carrollton—Carroll County Fiscal Court, will lay 2 roads. For full detail see Mchy. Wanted—Road Construction; Gravel.

Ky., Hopkinsville—Christian County plans completing Hopkinsville-Dawson Springs road from end of present pike to Government hospital reservations; Fiscal Court appropriated \$6000; Chamber of Commerce and Christian County Farm Bureau will furnish balance. Address County Commrs.

Ky., Morganfield—City. For full detail see Mchy. Wanted—Paving.

Ky., Whitesburg—Letcher County Fiscal Court, plans expending \$200,000 and State \$50,000 for following roads:

from Haymond to Jenkins; from Ermine to Mayking.

Louisiana—Louisiana Highway Coman., Baton Rouge, La., let contracts to Pickett & Hollier, Opelousas, at \$145,988.98 to gravel surface and build concrete bridges on following:

Sec. A.—8.88 mi. Opelousas-Lafayette Highway (Opelousas to Beensett).

Sec. B.—1.98 mi. Opelousas-Marksville Highway (Opelousas to Washington).

To A. R. McBurney, Welsh, La., at \$36,988.27, to gravel surface, construct drainage structures, etc., on following:

3.93 mi. Lake Charles—De Ridder Highway, 1.01 mi. Lake Charles-Oberlin Highway.

La., Convent—Louisiana Highway Coman., Baton Rouge, La., and St. James Parish

August 3, 1922.

## MANUFACTURERS RECORD.

Police Jury let contracts to H. M. Weber, Thibodeaux, La., at \$62,489.77, to gravel surface following:

- 3.30 mi. East Bank Highway.
- 5.36 mi. West Bank Highway.
- 5.70 mi. Vacherie Highland.

La., Crowley—Acadia Parish Police Jury let contract to J. C. Klimmerly, Church Point, for 15 mi. gravel road in Second Ward, connecting Maxie and Robert Cove section with Rayne and Crowley.

La., Thibodaux—Lafourche Parish Police Jury let contract to H. M. Weber, Thibodaux, at \$30,000, for 6.83 mi. hard surface road along Bayou Blue Road Dist. No. 4, on Raceland-Houma road.

Maryland—State Road Comsn., 601 Garrett Bldg., Baltimore, will lay 6 roads. For full detail see McChy. Wanted—Road Construction.

Maryland—State Roads Comsn., 601 Garrett Bldg., Baltimore, Md., received bids for following:

Anne Arundel County, 1.29 mi. New Cut road, between Brooklyn and Pumphrey; concrete; Christlifl & Ensey, 1625 Ridgely St., Baltimore, at \$27,605.50, low bidder.

Allegany County, 1.16 mi. toward Allegany Grove; macadam; S. T. Brotemarkle, at \$12,153.42, low bidder.

Allegany County, 28 mi. from Frostburg to swimming pool; concrete; Brady Bros. & Co., Frostburg, Md., at \$8118, low bidder.

Howard County, 1.53 mi. from Clarksville toward Dayton; concrete; Robertson Bros., Vickers Bldg., Baltimore, at \$46,351.50, low bidder.

Montgomery County, 1.37 mi. from Campbell's Corner to Leland's Corner; concrete; G. B. Mullin & Co., Washington, D. C., at \$8,296, low bidder.

Queen Anne's County, 1.82 mi. from Winchester to King's Store; concrete; John K. Flick, Sudlersville, Md., at \$42,987, low bidder.

Baltimore City, .75 mi. on 25th St. from Greenmount Ave. to Harford Road; sheet asphalt; Baltimore Asphalt Block & Tile Co., 1320 N. Monroe St., Baltimore, at \$76,580, low bidder.

Baltimore County, 3.71 mi. on Philadelphia road, from Golden Ring toward Harford County line; P. Flanigan & Sons, 2600 Harford Road, Baltimore, at \$105,713.22 for sheet asphalt, low bidder; and Robertson Bros., Vickers Bldg., Baltimore, at \$78,385.16 for concrete.

Md., Baltimore—Board of Awards, will pave Alleys and Footways. For full detail see McChy. Wanted—Paving.

Md., Baltimore—Board of Awards, Wm. F. Broening, Pres., received bids for laying Warren road in Gunpowder Valley; low bidder, D. C. McAleer Construction Co., Phoenix Bldg., Baltimore, at \$80,266.90.

Md., Baltimore—City, Paving Comsn., R. Keith Compton, Chrmn., plans paving Glenmore Ave. from Sefton to eastern limit of lot 975; Glenoak Ave. from Glenmore to Royston Aves.; City & Suburban Realty Co., Hamilton, paying half.

Miss., Natchez—Adams County, Board of Supvs. For full detail see McChy. Wanted—Road Construction.

Missouri—State Highway Dept., Jefferson City, Mo., wil lay 2 roads. For full detail see McChy. Wanted—Road Construction.

Missouri—State Highway Dept., Jefferson City, Mo., let contracts for following:

Henry County, .291 mi. State road, Windsor to Clinton; Federal Aid Project No. 133, Section B; to Allhands and Davis, Joplin, Mo.

Taney County, 2.434 mi. State road from

Forsyth southward; State Aid Project No. 20,150; to Kerr & Logan, Ozark, Mo.

Moniteau County, 1.193 mi. State road from Cooper County to California; State Aid Project No. 20,175; to Jones & Jordan, St. Louis, Mo.

Johnson County, 1.653 mi. State road from Warrensburg to Sedalia; State Aid Project No. 20,177; to Johnson Bros., Warrensburg, Mo.; grade and construct drainage structures on all.

Mo., Albany—State Highway Dept., Jefferson City, Mo., let contract to E. L. Meek Construction Co., Kansas City, Mo., at \$86,474.56, for 4 mi. State road in Jackson Township from King City northward and southward; Gentry County, Federal Aid Project No. 54; 8-in. rock foundation; 3-in. tarvia topping.

Mo., Cameron—City let contract to Cook-O'Brien Construction Co., Kansas City, Mo., at \$46,337.10 to pave E. 3rd and E. 5th Streets. Address The Mayor.

Mo., Carthage—City let contract to V. E. Koch, Joplin, Mo., to pave S. Maple St. Address The Mayor.

Mo., Chillicothe—City. For full detail see McChy. Wanted—Paving.

Mo., Gainesville—State Highway Dept., Jefferson City, Mo. For full detail see McChy. Wanted—Road Construction.

Mo., Gallatin—John N. Brown, City Clk., will expend \$40,000 for 20,000 sq. yds. asphaltic concrete pavement, and 6000 ft. curb and gutter; bids opened July 28; Shockley Engineering Co., Engr., Graphic Arts Bldg., Kansas City, Mo. (See McChy. Wanted—Paving materials.)

Mo., Kansas City—City Bd. of Pub. Works, let contracts for following: 58th St., bituminous macadam; to Spitcaufsky Bros., at \$7617.60, 18th St., concrete pavement; to Jas. O'Connor & Son, at \$8967; 13th St., concrete; to J. E. Welsh, at \$7584.20; 13th St., asphalt; to Parker-Washington Co., at \$9407.97; Wabash St., asphalt; to E. D. Tyner, at \$14,749.33; 14th St., asphalt; to Gray Paving & Material Co., at \$31,902.18.

Mo., Kennett—City let contract to Rouse & Henley, Cape Girardeau, Mo., at \$90,537.32, for paving certain streets. Address The Mayor.

Mo., Kennett—State Highway Dept., Jefferson City, Mo. will lay 2 roads. For full detail see McChy. Wanted—Road Construction.

Mo., Liberty—State Highway Dept., Jefferson City, Mo., let contract to Unit Construction Co., St. Louis, Mo., at \$326,250, to grade and lay asphaltic concrete surfacing on highway of State Project No. 25.

Mo., Malden—City plans paving streets in residential section with gravel, 24-ft. wide and 3 blocks in business section with concrete or asphalt from curb to curb. Address The Mayor.

Mo., Paris—State Highway Dept., Jefferson City, Mo. For full detail see McChy. Wanted—Road Construction.

Mo., St. Charles—City. For full detail see McChy. Wanted—Paving.

Mo., Troy—State Highway Dept., Jefferson City, Mo. For full detail see McChy. Wanted—Road Construction.

North Carolina—State Highway Comsn., Raleigh, N. C., let contracts for following projects:

131—Gates-Hertford Counties, 13.50 mi. gravel road, between Gatesville and Chowan County line; to Bacon-Moores, Littleton, N. C., at \$103,529, roadway; to Murray Sadler Corp., Norfolk, Va., at \$28,907.60 bridges.

132—Gates County, 9.37 mi. gravel road between Gatesville and Sunbury; to J. A.

Morrow, Clarksville, Va., at \$38,508.40, roadway, and at \$17,031.60, structures.

173—Pasquotank County 7.22 mi. hard surface Perquimana-Pasquotank highway between Elizabeth City and Woodville, to D. E. and E. L. Williams, South Mills, N. C., at \$218,816.50, roadway, and at \$15,275.50, bridges.

183-A—Pitt County, 13.54 mi. hard surface road from Greenville to Bethel; to S. G. Groves & Sons, Minneapolis, Minn., at \$363,504.

236—Johnson County, 14.83 mi. hard surface Central highway from Smithfield to Wake County line; to R. G. Lassiter & Co., Oxford, N. C., at \$419,943.

342—Cumberland County, 5.81 mi. hard surface road from Fayetteville to Hope Mills; to A. J. Wardrop, Knoxville, Tenn., at \$161,275.

484—Wake County, 8.79 mi. hard surface road from Raleigh to Neuse River; to P. R. Ashby, Raleigh, at \$251,116.70, roadway; Boo Lloyd Co., Larion, N. C. at \$29,255.50 for structure.

494—Warren County, 6.21 mi. hard surface road from Norlina to Vance County line; to Clifford Engineering Co., Montgomery, Ala., at \$189,209.10.

535—Guilford County, 7.78 mi. hard surface road from Greensboro to Reedy Fork; to Leavitt Lumber Co., at \$235,779.10, roadway; to Hagedorn Construction Co., Thomasville, N. C., at \$6907.45, structures.

569—Moore County, 18.5 mi. gravel road from Aberdeen to Lee County line; to Mayfield Construction Co., Denmark, S. C., at \$61,929.50; roadway; to C. B. Hester, Greensboro, N. C., at \$26,398, structures.

602—Alexander County, 9.28 mi. water bound macadam road from Taylorsville to Iredell County line; to W. E. Graham, Mt. Ulla, N. C., at \$172,118.

640—Iredell County, 8.17 mi. hard surface Statesville-Taylorsville road; to W. E. Graham, Mt. Ulla, N. C., at \$141,369.50.

702-A—Allegheny County, 7.75 mi. hard surface road from Sparta to Stratford; to O'Brien Construction Co., Birmingham, Ala., at \$132,152.60, roadway; to Concrete Steel Bridge Co., Clarksburg, W. Va., at \$18,921.35, structures.

764—Surry County, 1.63 mi. hard surface road near Pilot Mountain; to Leakesville Lumber Co., at \$45,962.

886—Yancey County, 15.22 mi. gravel or hard surface road from Swiss to Mitchell County line; to Luck Co., Sylva, N. C., at \$281,106.50; to Clark Construction Co., Winchester, N. Y., at \$42,075.60, structures.

952-A—Jackson County, grade and build bridges on 10.22 mi. road from Glenville to Forks of Tuckasegle River; to Brooks Calloway Co., at \$36,888.70.

963—Macon County, 8 mi. soil road from Franklin to Jackson County line; to Costello Brothers, Knoxville, Tenn., at \$85,207.90, roadway to Brooks Calloway Co., at \$25,115.40, structures.

713—Ashe County, 3.53 mi. hard surface road leading south of Jeffersón; to J. F. Mullingson Construction Co., North Wilkesboro, N. C., at \$135,908.50, roadway; to Concrete Steel Bridge Co., Clarksburg, W. Va., at \$18,922.35, structures.

814—Burke County, 8.69 mi. gravel road from Morgantown to Caldwell County line; to M. A. Colloch, Marion, N. C., at \$12,625.20.

N. C., Asheville—E. W. Grove Investment Co., let contract to Asheville Paving Co., to pave Kimberly road; 60-ft. wide; 32-ft. pavement; asphalt with concrete base; to R. C. Stevens for sidewalks and curb stones.

N. C., Goldsboro—City Mgr. Ruch, let contract to Union Paving Co., Kinston, N. C., at \$25,000 to \$30,000, to pave and extend

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Ashe St. from Herman St. to city limits, and pave Ashe St. extension, between George and Virginia Sts.

N. C., Greensboro—City let contract to Murray Construction Co., Knoxville, Tenn., at \$250,000, to pave about 5 mi. streets; Whittington, Railroad, Percy, Oak Court, Douglas, Humphrey Ave., etc. Address The Mayor.

N. C., Kinston—W. B. Coleman, Clerk, let contract to Paul N. Howard, Raleigh and Kinston, at \$16,514 for paving 4550 sq. yds. sidewalks and laying 3175 ft. storm drains; paving on Perry and College Sts., and Verner Aves.

N. C., Monroe—State Highway Coms., 6th Dist. Office, Charlotte, N. C. For full detail see Mch. Wanted—Road Construction.

N. C., Raeford—City. For full detail see Mch. Wanted—Paving.

Okla., Duncan—City, Board of Comms., let contracts to Western Paving Co., Oklahoma City, at \$100,000, for asphaltic concrete paving, and improving Street Improvement Dists. Nos. 10, 11, 12, 13, and 15; Benham Engineering Co., Engr., Kansas City, Mo.

Okla., Kaw City.—A. L. Williams, City Clk., let contract to R. C. Penney, Kaw City, Okla., at \$50,000 for street paving and sewer system; J. P. Rickard, Engr., Ponca City, Okla.

Okla., Morris—R. Ward, Mayor, plans expending \$90,000 to pave 2½ mi. streets; Salina gravel; asphalt top; cement curb and gutter; bids opened July 31; T. P. Paxton, Engr., Okmulgee, Okla.

S. C., Anderson—Anderson County Highway Coms., W. A. Sanders, County Comms., let contract to Newell Contracting Co., Anderson, at \$15,868.85 to lay 5¼ mi. Honea Path-Kays Bridge road, between Honea Path and Saluda River; top soil surfacing.

S. C., Blacksburg—City will pave streets; voted \$30,000 bonds. Address The Mayor.

Tenn., Knoxville—Knoxville Railway & Light Co., plans expending over \$70,000 to rebuild and pave between its double track lines on Park Ave., from Gay St. to viaduct.

S. C., Charleston—Charleston County Sanitary and Drainage Coms. For full detail see Mch. Wanted—Road Construction.

S. C., Columbia—Richland County Permanent Roads Coms., Arcade Bldg., let contract to Hardaway Construction Co., at \$22,000 for 1½ mi. Wateree River bridge approach on Richland side.

S. C., Columbia—City, W. S. Tomlinson, City Engr., let contract to Powell Paving Co., to pave 15,000 sq. yards. roadway; 2800 lin. ft. combination curb and gutters; 500 lin. ft. reset curb; 1500 sq. yds. sidewalk; 1200 sq. yds. gutter; asphaltic concrete.

S. C., Greenville—George Wells, City Clk., plans paving Brown St. from Oak to Elford, and Whitsett from Toy to Carolina Ave.; sidewalks to be paved on following: Arlington Ave., Whitner, College, Stall Sts., Lawton Ave., etc.

S. C., Laurens.—For full details See Water Works.

S. C., Orangeburg—Orangeburg County Highway Coms. For full detail see Mch. Wanted—Road Construction.

S. C., Sumter—Sumter County Permanent Road Coms., will lay 3 roads. For full details see Mch. Wanted—Road Construction.

S. C., Sumter—State Highway Dept., Co-

lumbia, S. C., received bids for 4.4 mi. Wateree River bridge approach on Sumter side; Simons & Mayrant, Charleston, S. C., at \$34,000, low bidder.

Tenn., Elizabethton—Carter County road Coms. For full detail see Mch. Wanted—Road Construction.

Tenn., Knoxville—Knox County let contracts for laying 6½ mi. waterbound macadam roads in 3 projects as follows:

3 mi. Paper Mill road, connecting Kingston Pike at Sta. 130 with Middlebrook Pike, beyond terminus street car line; to R. L. Peters.

1½ mi. Ruggles Ferry road to Straw road; to Ray Gibson.

2 mi. road connecting Sevierville pike from point near Gillseppe's Store with Neubert Springs road.

Tenn., Nashville—For full detail see Mch. Wanted—Paving.

Tenn., Rutledge—Grainger County Highway Coms. For full detail see Mch. Wanted—Road Construction.

Tex., Brenham—Washington County plans improving several lateral roads in County, connecting State Highways; \$75,000 available; J. H. Chappell, County Judge; G. A. Bracher, County Engr.

Tex., Edinburg—Hidalgo County plans laying 14 mi. State Highway No. 12; gravel surface; 2-in. bituminous topping; \$600,000; Geo. P. Brown, County Judge, Edinburg; P. S. Devine, County Engr., Pharr, Tex.

Tex., Falfurrias—Brooks County plans resurfacing 20 mi. State Highway No. 2, between Falfurrias and Encino; Caliche; \$12,000; J. T. Brooks, County Judge.

Tex., Fort Worth—Tarrant County Coms., Court, W. E. Yancey, County Auditor plans following:

3.6 mi. Keller-Denton road.

8.13 mi. Grapevine cordinal road, through Bedford and Euless; bids opened Aug. 3.

Tex., Fort Worth—City and Tarrant County will repair N. Main St. from 25th St. to Hickie road; Paul Gilvin, Commr. of Streets.

Tex., Georgetown—Williamson County Coms., Court, will receive bids soon for 18 mi. road from Georgetown to Jarrell; \$120,000; County to pay \$60,000, State and Federal Highway Aid, \$60,000.

Tex., Hallettsville—Lavaca County, Road Dist. No. 2, plan highway improvements; \$220,000 bond issue available; F. A. Sommerlatt, County Judge; C. Koether, County Engineer.

Tex., Hemphill—Sabine County plans additional highway improvements, including State Highway No. 21, through County; \$300,000 bond issue available; W. C. Arnold, County Judge.

Tex., Jasper—Jasper County plans laying road on State Highway No. 7, between Jasper and Newton County line; \$130,000; C. B. Neel, County Judge; C. P. Hunter, County Engr.

Tex., Laredo—Webb County plans following:

highway eastward to Mirando City oil field; \$150,000 bonds available.

33 mi. bituminous topping on State Highway No. 7; A. Winslow County Judge; S. F. Creelius, County Engr.

Tex., Leonard—City will pave streets; voted \$25,000 bonds. Address The Mayor.

Tex., Mason—Mason County plans laying 14.2 mi. State Highway No. 9, from Mason, Tex., to McCulloch County line; \$85,000; J. T. Banks, County Judge; Joe Gresham, County Engr.

Tex., New Boston—Bowie County. For full detail see Mch. Wanted—Road Construction.

Tex., Newton—Newton County plans laying short section of State Highway No. 8; J. E. Rausch, County Judge; W. T. Bolton, County Engr.

Tex., Pecos—U. S. Dist. Engr., Fort Worth, Tex., approved plans for 11.32 mi. gravel and caliche surfaced road on State Highway No. 27, from Toyahvale to Pecos County line; \$45,000; J. F. Ross, County Judge, Pecos; A. J. Adcock, Co. Engr., Balmorhea, Tex.

Tex., Rio Grande—Starr County plans laying 47 miles Brownsville-Laredo Highway, (State Highway No. 12) through County; \$150,000 bond issue available; State and Federal Aid asked; H. Garza, Jr., County Judge.

Tex., San Antonio—Bexar County. For full detail see Mch. Wanted—Road Construction.

Tex., San Antonio—Bexar County Comms. Court, August McCloskey, County Judge, will receive bids for 158 mi. Pearsall road from San Antonio to Laredo; will reconstruct about 8 mi. road between Leon Creek and Artesian Belt road; 1-in. bituminous topping; State and Federal Aid approval.

Tex., San Antonio—Bexar County plans gravel surfacing Gladstone St. from Somerset road to Corpus Christi road in Precinct No. 1; bids opened July 27, W. S. Kendall, County Auditor; Augustus McCloskey, County Judge; R. E. Killmer, County Highway Engr.

Tex., San Marcos—Hays County Comms. Court. For full detail see Mch. Wanted—Road Construction.

Tex., Tyler—Smith County plans following: 7 mi. 16-ft. gravel road on State Highway No. 37, from near Tyler to Henderson County line; \$80,000.

1.6 mi. 16-ft. gravel surfaced road on State Highway No. 15-A; \$18,000; D. R. Pendleton, County Judge; D. K. Caldwell, County Engr.

Tex., Waco—McLennan County, will lay 2 roads. For full detail see Mch. Wanted—Road Construction.

Va., Petersburg—City. For full detail see Mch. Wanted—Paving.

W. Va., Charleston—City. For full detail see Mch. Wanted—Paving.

W. Va., Elkins—Randolph County. For full detail see Mch. Wanted—Road Construction.

W. Va., Harrisville—Ritchie County Coms. contemplate improving lateral roads leading to main thoroughfares.

W. Va., Huntington—City. For full detail see Mch. Wanted—Paving.

W. Va., Huntington—Cabell County Court, Thos. Hays, Prest., received bids for following:

5 mi. Barbourville-Salt Rock road, McComas Dist., south from end of present contract near Inez; Wayne Construction Co., low bidder.

3.43 mi. Long Branch-Wayne road, Barboursville Dist. from end of present contract toward Wayne County; Geo. L. Pence, low bidder.

1.7 mi. Mail Seven Mile road, Union Dist., from end of present contract toward Milton; James E. Doyle, low bidder.

W. Va., Wayne—Wayne County, Lincoln Dist. will lay road through Dist. to connect with Mingo road at Marrowbone; vote Aug. 8 on \$150,000 bonds. Address County Coms.

W. Va., Wellsburg—State Road Coms., Charleston, W. Va. For full detail see Mch. Wanted—Road Construction.

### SEWER CONSTRUCTION.

Ala., Wetumpka—City will install sewerage

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system in N. Bridge St.; Address The Mayor.  
Fla., Inverness—For full detail see Water Works.

Fla., Miami—City Comrs. let contract to Deere & Co., for contracts Nos. 27 and 28, at \$80,605 and \$65,505, and J. J. Quinn Co., for sewers, Contract No. 28, at \$24,984; contract for sewer castings let to C. H. Lyne Foundry.

Fla., Miami Beach—City will construct sewer system, install pumping station and power plant, tanks, etc.; voted \$125,000 bonds, C. W. Tomlinson, Clerk. (Lately noted.)

Md., Baltimore—City, August E. Christ-hill, Highways Engr., will construct 12-ft. drainage tunnel under bed of Presstman St., from Slingluff Ave. to Gwynn Falls; will divert and close Gwynns' run; cost \$600,000; will also construct sanitary and storm water sewer through the run leading from Franklin road to Hilton St. and grounds of Walbrook Athletic Club, \$38,000 appropriation; construct storm and sanitary sewer in bed of Calvert St., from 32nd to 33rd Sts.; cost \$39,000; to connect with drainage system for Guilford section and section east of York road; construct storm and sanitary storm sewer in bed of Baltimore St., between Third and Eighth Sts., Highlandtown; cost \$4500.

Md., Chevy Chase—Washington Suburban Sanitary Comrs., Evans Bldg., New York Ave., Washington, D. C., let contract at \$32,000 for approx. 1365 lin. ft. of 6-in. 6-in. trunk sewer on Nevada Ave. to W. F. Brenzer Co.; will soon let contract at about \$30,000 for extending sewer from north side of Keokuk St. to McKinley St.

Mo., Plattsburgh—For full details see Mch. Wanted—Sewer Construction.

N. C., Asheville—For full detail see Water Works.

N. C., La Grange—City will install sewer system; cost \$50,000. Address The Mayor.

N. C., Kinston—For full detail see Road and street Construction.

Oklahoma, Kaw City. For full details see Road and Street Construction.

S. C., Clover—For full details see Textile Mills.

S. C., Kingtree—City let contract to Chittwood & Palmer, for extension of sewerage system.

Tenn., Chattanooga—For full detail see Mch. Wanted—Sewer Construction.

Tenn., Nashville—For full detail see Machinery Wanted—Underground Connection.

Tenn., Nashville—For full detail see Mch. Wanted—Sewer Construction.

Tenn., Nashville—For full detail see Mch. Wanted—Storm Water Culvert.

Tex., Colorado—City let contract to W. C. Weeks, Arlington, for sewer system and extension to water mains; Myers & Noyes, Engrs., 1107 Dallas County Bank Bldg.

Tex., Dallas—Board of Comrs. authorized construction of four 6-in. sanitary sewers on Gold Ave., Belmont Ave., Bonview Ave., Palo Pinto Ave.; also construction of 10-in. sanitary sewer in Vickery Place; estimated cost \$2813.50.

Tex., Houston—For full detail see Mch. Wanted—Sewer Construction.

### Shipbuilding Plants.

Md., Baltimore—Ship Ceilers—Wm. F. Shinnick & Co., 720 S. Caroline St., increased capital by \$75,000.

### Street Railways.

Tenn., Knoxville—Knoxville Railway & Light Co., will reconstruct lines at cost of

\$70,000 or more, including heavier rails, etc. C. H. Harvey is Prest.

### Telephone Systems.

Tex., Riesel—Riesel Telephone Co., Incptd. by F. H., W. O. and E. H. Miller.

W. Va., Bluefield—Bluefield Telephone Co., increased capital to \$1,000,000.

### Textile Mills.

Ala., Rosedale, P. O. Birmingham—Kosenan Hosiery Mill will rebuild mill lately burned at loss of \$75,000.

Ga., Athens—Cotton—Bowen-Crewe Co., capital \$50,000, Incptd. with O. W. Brown, Prest.; purchased and will operate White City Mills.

Md., Baltimore—Wool, etc.—James P. Hooper Mfg. Co., Fidelity Bldg., capital \$300,750, Incptd. by Robt. H. Walker, R. Tynes Smith, Jesse N. Bowen; reported to have mill on Falls Rd.; mfrc. wool, silk, etc.

N. C., Shelby—Cotton—J. R. Dover and Kiwanis Club interested in establishing cotton mill.

N. C., Statesville—Yarn—Hall-Kale Mfg. Co., capital \$500,000, Incptd. by J. B. Hall, Statesville; J. E. Kale, Lincolnton; R. H. Kale, Mount Holly; will construct combed yarn mill; 6000 spindles.

S. C., Clover—Thomas McConnell Prest. of Hawthorn Spinning Mill and Hampshire Spinning Mill contemplates equipping mill villages with sewer system. (Lately noted Incptd.)

Tenn., Chattanooga—Dixie Spinning Mills, Carter Lupton, Prest., will construct mills, ultimate developments 12 to 15 mills, or approx. 15,000 spindles each, to spin fine yarn; construction will begin about August 15 on first unit; entire site covers 850 acres located 5 mi. from Chattanooga; Roberts & Co., Atlanta, Ga., Engrs. (Lately noted.)

Tenn., Chattanooga—Hosiery—Devenport Hosiery Mills, T. W. Fred, Prest., contemplate addition to mill.

Tenn., Erwin—Cotton—R. S. Abernathy of Lincolnton, N. C., and W. C. Heath of Charlotte and others reported interested in establishing 5000 H. P. dam and \$500,000 cotton mill; dam will be 30-ft. high and have roll-way of 700 feet and will span river at Devil's Looking Glass; develop 5000 H. P.; cost of dam about \$500,000; cotton mill will contain 15,000 spindles, cost of mill about \$500,000.

Tex., Colorado—For full details see Sewer Construction.

Tex., Victoria—Gingham—G. H. Breese, of Planters and Merchants Mills, New Braunfels, Tex., reported interested in establishing gingham mill.

### Water Works.

Ala., Leesburg—Town will install water works system. Address The Mayor.

D. C., Washington—Major M. C. Taylor, Engr. in charge, let contract to Arundel Corp., Pier 2, Pratt St., Baltimore, for construction of 8 mi. conduit from Great Falls of the Potomac to Washington; opening, 10 ft. by about 10 ft.; over all dimensions, 16 ft. by 18 ft.; will use from 135,000 to 140,000 bbls. cement; cost about \$2,100,000.

Fla., Homestead—City will improve water works, voted \$25,000 bonds; improve electric light plant, voted \$60,000 bonds; fire dept. improvements, voted \$5000 bonds; street improvements voted \$35,000 bonds. (Lately noted.)

Fla., Inverness—City is constructing water works and sewer system; J. B. McCrary Engineering Co., Contra, Atlanta, Ga.; W. L. Moore, Atlanta, Ga., in charge of construction.

Fla., Quincy—For full detail see Mch. Wanted—Water and Power Plant Improvements.

Fla., St. Petersburg—City will issue \$160,000 bonds for water works system; \$50,000 for improvements to gas plant; \$70,000 for widening Beach Drive from Fifth to Sixth Ave., North. Address The Mayor.

Ga., Ray City—For full detail see Electric Light Plants.

Md., Baltimore—Board of Award, Wm. F. Broening, Prest. will probably let contract at \$90,449 to A. P. Smith Mfg. Co., East Orange, N. J. for valves in connection with water main on Mount Royal Terrace and reservoir on Reisterstown Rd.

Md., Baltimore—For full detail see Mch. Wanted—Trench Excavation.

Mo., Bowling Green—City contemplates installing water works plant. Address The Mayor.

N. C., Asheville—E. W. Grove Investment Co., let contract to Kelley-Wilson Co., to construct water and sewer system in development of Grove Park for residential site.

N. C., Kernersville—City let following contracts for water and sewer system; for water, sewer and discharge system to Boyd, Higgins & Goforth, Charlotte; for tanks to R. D. Cole Mfg. Co., Newnan, Ga.; for wells to Cummins & Williams, Kernersville; cost about \$100,000. (Contract for wells lately incorrectly noted.)

Oklahoma, Tulsa—For full detail see Mch. Wanted—Water Supply.

S. C., Greenville—Augusta-Road Water Co., capital \$7000, Incptd. with G. L. Walker, Prest.; J. R. Jenkinson, V.-P.; J. M. Milam, Secy.

S. C., Laurens—City will install water works plant and improve streets; voted \$65,000 water bonds, \$40,000 street improvement; Address The Mayor. (Lately noted.)

Tenn., Nashville—For full detail see Mch. Wanted—Underground Connections.

Tex., Dallas—City, Fred Appel, Water Coms., will construct 3 reservoirs with capacity of 1,000,000 gal. each in Oak Cliff, Belmont and Junius Heights; to aid water pressure.

Tex., Karnes City—City let contract at \$5600 to A. W. Fussell, for erecting two pump houses and reservoir for water system; contract for installing 17,000 ft. of cast iron pipe let to N. A. Saigh Co.

Tex., Lubbock—City will improve water works; voted \$50,000 bonds; S. Sanders, City Engr.; C. E. Parks, Mayor.

Tex., Moran—City opened bids for construction of water system; 110,000 gals. daily capacity; cost \$35,000; Des Moines Steel Co., Pittsburgh, Pa., lowest bidder. (Lately noted.)

W. Va., Wheeling—Wheeling Steel & Iron Co. will construct water connecting mains between Whitaker-Glessner plant in East End, LaBelle Iron Works at 30, 31 and 32nd Sts. and Wheeling Steel & Iron Co.'s plant at 26th and Main Sts.

### Woodworking Plant.

Fla., Groveland—Window Frames, etc.—H. H. Prashun will erect plant to mfrc. window frames, sash, doors, etc.

Fla., Jacksonville—Ocean St. Furniture & Supply Co., capital \$10,000, Incptd. with W. H. Ryall, Prest.; I. B. Brenner, V.-P.; J. L. Trippett, Jr., Secy.

Mo., Springfield—Furniture—Springfield Furniture Co., capital \$200,000, Incptd. by M. B. Brook, H. B. McDaniel, G. Rackett.

S. C., Greenville—Bobbins-Morris Bros.,

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D. L. Morris, Prest. let contract to Gallivan Building Co., Greenville, for construction of cotton mill bobbin factory; 2 story; daylight; 40x128 ft.

Tenn., Crossville—Staves—G. L. Frazier Co., Nashville, purchased 2500 acres oak timber land and will mfre. staves.

W. Va., Wheeling—Essential Cabinet Co., capital \$10,000, incptd. by A. V. Fischer, Charles Henne, B. J. Fisher.

## FIRE DAMAGE

Ala., Gadsden—Smith Lumber Co.'s plant on N. Tenth St.; loss about \$5000.

Ala., Rosedale, P. O. Birmingham—Rose-nan Hosiery Mill; loss \$75,000.

Ga., Atlanta—Southern-Doris Co.'s garage at 17 Gilmer St.; Jenkins Vulcanizing Co.'s plant, 9 Gilmer St.; Hargrave Bros. auto. repair shop at 11 Gilmer St.; loss about \$200,000.

Md., Baltimore—H. R. Mayo Thom's barn,

granary, engine, water and electric plants, paint shop, etc., Rocky Beach; loss about \$10,000.

Mo., St. Louis—Banner Packing Co.'s plant at DeKalb St. and Russell Ave.; loss \$10,000.

N. C., Fayetteville—Dr. Jno. A. Mac-Kethan's 3 buildings.

N. C., High Point—Brookridge Dairy Co.'s barn, dairy, etc., C. C. Robbins, Prop.

Okl., Jenks—Prairie Pipe Line Co.'s 35,000 bbl. steel tank; loss about \$70,000.

S. C., Bamberg—Denbow Tobacco Warehouse Co.'s warehouse, Mayor LaVerne Thomas, Prest.; loss \$15,000.

S. C., McCormick—Mrs. M. L. Carroll's residence; loss \$30,000.

Tenn., Memphis—Building on Main St. near Union Ave., occupied by Cogswell Candy Kitchen and Piggly-Wiggly Grocery; \$60,000.

Tex., Navasota—Planters Cotton Oil Mill; loss \$50,000.

W. Va., Bakerton—C. D. Carter's store.

40x105 ft.; brick; stone trim; R. W. Shaw, Archt.

S. C., Greenwood—South Main St. Baptist Church, R. E. Gaines, Chrmn. Bldg. Comm., will alter and erect addition to Sunday school lately noted; concrete and hardwood floors; interior tile; rolling partitions; ventilators; Jas. C. Hemphill, Archt. (See Mchly. Wanted—Rolling Partitions.)

Tenn., Bolivar—Baptist Church will erect building. Address The Pastor.

Tenn., Nashville—Blakemore Methodist Church, Wellington and 28th Aves., B. H. Klyce, Chrmn. Bldg. Comm., plans \$20,000 to \$25,000 Sunday school building at West End and 30th Aves.; church later.

Tex., Breckenridge—Methodist Church plans \$60,000 church and parsonage. Address The Pastor.

Tex., Mexia—First Christian Church will erect building; Young & Young and S. J. Blocker, Archts.; bids opened July 31.

Va., Lynchburg—Rivermont Ave. Methodist Church will erect Sunday school building, Marshall St. and Rivermont Ave.; assembly hall to seat 300; native brick; church later. Address The Pastor.

Va., Richmond—First Christian Church plans building at Grove and Sheppard St.; L. P. Hartsook.

Va., Richmond—Grove Ave. Presbyterian Church plans building, Grove Ave. and Tilman St.; Baskerville & Lambert, Archts.

## City and County.

Fla., Eustis—Library—Eustis Library Association, Chas. Isted, Chrmn. Bldg. Comm., will erect library building.

Md., Baltimore—Fire Stations—Board of Awards, Mayor Wm. F. Broening, Prest., will erect fire station at Westport, Hamilton, Curtis Bay and Morrell Park; Fred'k. Thomas, 135 N. Kenwood Ave.; Clinton P. Greer, 22-09 Roslyn Ave.; Wm. H. Emory, Munsey Bldg.; Herbert C. Aiken, 4115 Ridgewood Ave. and Carl F. Strohmeyer (associated); Archts. (Lately noted.)

Mo., Kansas City—Fire Alarm Building—City plans central fire alarm station, 15th St. and the Parade. Address The Mayor.

W. Va., Bluefield—Auditorium—Myron T. Marsh, Kire, Va., and others are promoting erection of auditorium; 64x150 ft.; brick, steel and limestone; built-up roof; maple floors; about \$50,000; to seat 2500; Martin J. Garry and Robt. A. Sheffy, Asso. Archts.

W. Va., Wheeling—Library—City, Col. Jere A. Miller, Chrmn., Library Comm., will erect 1-story addition to public library; \$20,000.

## Courthouses.

La., Shreveport—City will erect courthouse and jail; Edw. F. Neild, Archt., 206 Merchants Bldg.; Central Construction Co., low bidder at \$181,000. (Lately noted.)

N. C., Wilson—Wilson County defeated \$250,000 bond issue for courthouse and jail.

## Dwellings.

Ala., Birmingham—Davis & Morrow will erect \$12,000 dwelling on Cliff Rd.

Ala., Tuscaloosa—Mrs. Annie Hood will erect several cottages.

D. C., Washington—D. J. Dunigan plans 200 dwellings on tract bounded by Rock Creek Church Rd., Webster St., Grant Circle and Upshur St., Petworth Addition; several under construction.

Fla., Eustis—Mrs. Annie Stewart, Altoona, will erect dwelling on Lake Shore Drive; Badger's Addition.

Ga., Athens—M. G. Michael will erect \$40,000 dwelling, Milledge Ave.; hollow tile and

## BUILDING NEWS

### BUILDINGS PROPOSED

#### Apartment Houses.

Mo., St. Louis—Frank A. Hueser, 4534 Fair Ave., in preparing plans for \$12,000 flat building, Clarence and Florissant Sts.; also \$10,000 building; 27x52 ft. and 28x45 ft.; brick and stucco; slate and tile roofs; hardwood floors; hot water heat. (Lately noted.)

S. C., Greenville—Mrs. A. A. Gates plans \$50,000 building; Richardson St., opposite Imperial Hotel.

Va., Norfolk—Garden Terrace Corp., will erect \$2,000,000 building, Armistead Bridge Rd. near W. Ghent Blvd.; 200-ft. front; brick and stone; terra cotta trim; 4 stories; 60 apartments; garage space in rear; Herbert W. Simpson, Archt.

#### Association and Fraternal.

Fla., Eustis—Eustis Lodge No. 85, A. F. &

A. M., plans 3-story store and lodge building.

Mo., Kansas City—Marquette Council No.

1698, Knights of Columbus, will erect \$350,000 to \$400,000 clubhouse, Forest Ave. and

Armour Blvd.; 2 floors for bachelor apts.;

roof garden; gymnasium; swimming pool, etc.

N. C., Raleigh—Independent Order Odd Fellows, Jno. D. Berry, Grand Sec., will erect fireproof lodge and office building, Hargett and Salisbury Sts.; 10 stories; 68x96 ft.; roof garden; \$300,000; elevator; G. Lloyd Preacher & Co., Archts., Atlanta. C. B. Edwards, Chrmn., 123 W. Martin St., Raleigh. (Lately noted.)

Tex., Dallas—Young Men's Hebrew Assn., plans \$40,000 gymnasium, Pocohontas and Eakin Sts.; swimming pool.

Tex., Houston—San Jacinto Lodge of Perfection No. 6 and Houston Chapter Rose Croix No. 3 will erect Scottish Rite Cathedral, Caroline St. and Polk Ave.; \$300,000; Alfred C. Finn, Archt. (Previously noted.)

#### Bank and Office.

Md., Baltimore—Consolidated Gas, Electric Light & Power Co., Lexington Bldg., will erect \$112,410 office building at distributing plant, Madison and Graves Sts.; 227x105 ft.;

3 stories; reinforced concrete and brick; plans by owner.

Miss., Starkville—Security State Bank will erect building on Main St.

N. C., Lumberton—Lafayette Mutual Ins. Co., Robt. E. Lee, Prest., will erect 2 additional stories on building now occupied by Planters Bank & Trust Co.; install elevator and steam heating system. (Lately incorrectly noted at N. C., Wilmington.)

Tenn., Chattanooga—Fred Cantrell plans \$100,000 building at 620 Market St., to be occupied by Chattanooga Ry. & Light Co.; display room on first floor, 50x130 ft.

Tenn., Knoxville—C. B. Atkin will complete third story of Mercantile Bldg. for offices; \$13,000.

Tex., Electra—Magnolia Petroleum Co., Dallas, will erect office building. (See Gas and Oil Enterprises.)

W. Va., Charleston—Kanawha Investment Co., will erect 8-story office building, Summers and State Sts.; 161x168 ft.; 3 wings.

#### Churches.

Fla., Lakeland—Christian Church plans building at Lemon and Missouri Aves.; \$15,000 to \$20,000; brick. Address The Pastor.

Fla., St. Petersburg—Henry H. Dupont, Archt., receives bids until Aug. 10 to erect Sunday school building for Congregational Church; plans and specifications from Archt., about \$50,000; 50x124 ft.; brick walls; metal columns and trusses; wood floors; Barrett roof; steam heat.

La., Carville—Louisiana Comm. American Mission to Lepera, H. J. Veith, Chrmn., 840 Baronne St., New Orleans, will erect \$20,000 brick church at Home for Lepers.

La., New Orleans—Beth Israel Congregation will erect \$75,000 synagogue, Carondelet and Euterpe Sts.; 2 stories; capacity 900; brick; Weiss & Dreyfous, Archts., Maison Blanche Bldg.

N. C., East Spencer—Calvary Lutheran Church, Rev. Floyd B. Lingle, Pastor, will erect \$40,000 building.

Okl., Enid—Church of Christ, care A. J. Smith, will erect \$40,000 addition; 3 stories;

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brick veneer; Hentz, Reid & Adler, Archts., Atlanta.

Ky., Smiths Grove—Jas. Tutt Snodgrass will erect dwelling to replace one lately noted burned; 36x53 ft.; frame; shingle roof; hardwood floors; grates; city lights.

La., Camden—Lamar Smead purchased site on W. Washington St. and plans dwelling.

La., New Orleans—Joe Dusnor, 2421 Sontiat St., will erect \$11,000 duplex, 1916-18 Gen. Pershing St.; F. Dennis, Archt.

La., New Orleans—Henry Flonacher will erect \$20,000 dwelling, Newcomb Blvd. and St. Charles Ave.; 2 stories; frame stucco; Weiss & Dreyfous, Archts., Maison Blanche Bldg.; ready for bids Aug. 25.

La., New Orleans—Leon Tujaque will erect dwelling, Napoleon Ave. and Johnson St.; 2 stories; frame stucco; Weiss & Dreyfous, Archts., Maison Blanche Bldg.

La., New Orleans—Mrs. Walsh, 7921 Sycamore St., will erect \$12,950 duplex at Sycamore and Dublin Sts.

Md., Baltimore—W. D. Pitt, Homewood Apts., will erect \$25,000 dwelling, Falls Rd. Terrace near Edgecombe Rd.; 30x40 ft.; 2½ stories; hollow tile and stucco; Howard Sill, Archt., 11 E. Pleasant St.

Md., Baltimore—E. A. Deverell will erect Robert Adam type dwelling, 3408 Copley Rd., Ashburton; 2½ stories; Italian pebble walls; 2 baths; garage; 36x28 ft., frame; slate roof; hardwood floors; Monitor Bi-Loop heat; Roy G. Pratt, Archt., 323 N. Charles St.

Md., Baltimore—Harvey C. Jones, 131 Law Bldg., will erect 10 dwellings, Avondale and Hamlin Aves.; \$36,000; 2 stories; brick.

Md., Baltimore—Jas. Keelty, 1123 Poplar Grove St., will erect 14 dwellings, 3701-27 Edmondson Ave.; \$35,000; 2 stories; brick.

Md., Baltimore—Welsh Construction Co., 11 E. Fayette St., will erect 3 dwellings, Oak Hill Ave. near Auburn Ave.; also 4 dwellings, Ferndale Ave. near Auburn Ave.; \$28,000; 1-story; frame; 26x31 ft.; George Wessel, Archt., 2752 Winchester St. (Lately noted.)

Md., Baltimore—Young & Riddell will erect 6 dwellings, Norwood Ave. near Hillsdale Rd.; \$30,000.

Md., Baltimore—Jno. C. Lamb, 2442 Guilford Ave., will erect 2½-story dwelling and garage; Merry Mount Rd. near Shipton Path, Roland Park.; clapboard and shingle roof; Roy G. Pratt, Archt., 323 N. Charles St.

Md., Baltimore—Chas. J. Schuster, Secy., A. E. Staley Mfg. Co., will erect \$20,000 dwelling, Stratford Rd. near Charles Street Ave., Guilford; 2½ stories; brick; 2 baths; 2-car garage in rear; E. L. Palmer, Jr., Archt., 513 N. Charles St.

Md., Baltimore—R. J. Heinekamp, 1101 Cathedral St., will erect \$10,000 cottage, Englewood Rd. near Falls Rd.; 40x30 ft.; 2 stories; stucco; slate roof; oak floors; hot water heat; electric lights; J. A. Foreman, Archt., 6001 Foster Ave. (Lately noted.)

Mo., Kansas City—N. W. Dible, Prest., Home Investment Co., will erect dwelling at 805 W. 56th St., Sunset Hill.

Mo., Kansas City—Conrad-Mixon will erect 3 dwellings, 1300-06-10 E. 59th St.; \$7000 each.

Mo., Kansas City—Geo. E. McIntyre will erect \$16,000 dwelling, 409 E. 54th St.

Mo., Kansas City—Harkless-Dills will erect 3 dwellings, 5330-34-36 Tracy Ave.; \$4000 each.

Mo., Kansas City—W. H. Launder will erect 11 dwellings, 2200 to 2214 E. 58th St. and 5733 to 5737 Brooklyn Ave.; \$11,000.

Mo., Kansas City—Jack McEwen will erect 5 dwellings, 5112-14 Walron Ave., 3724-26-28 South Benton St.; total \$11,500.

N. C., Walnut Cove—A. F. Marshall will erect dwelling.

Oklahoma, Oklahoma City—C. E. Hoffman will erect \$4000 frame dwelling, 705 W. 34th St.; \$4000 frame dwelling and garage, 1619 W. 18th St.; \$6000 brick store, 800-02 E. 8th Street.

Oklahoma, Oklahoma City—Frank Hooper will erect 5 frame dwellings and garages, 2017-25 W. 17th St.; \$5000 each.

Oklahoma, Oklahoma City—Mrs. Sam I. Trove will erect \$10,000 brick veneer dwelling and garage, 401 W. 20th St.

Oklahoma, Tulsa—Robt. E. Adams will erect 3 bungalows, 2540-2544 E. 8th St. and 2512 E. 5th Pl.; \$4000 each; also \$10,000 dwelling, 1227 S. Newport St.

S. C., Greenwood—M. S. Chipley, R. S. Chipley & Co., will erect dwelling; 2 stories and basement; 16 rooms; pressed brick; marble columns, bases and caps; hardwood interior finish; 40x72 ft.; ell 22x14 ft.; tile roof; low pressure steam heat; city lights; Thos. W. Cotran, Archt.-Contr., all materials purchased.

S. C., Sharon—W. L. Hill is reported to erect brick dwelling.

Tenn., Memphis—H. G. Mason will erect \$17,000 duplex dwelling, 1320 Peabody St.; 2 stories; brick veneer.

Tex., Houston—J. E. Black will erect \$20,000 dwelling, 1115 Kipling Ave., Montrose; 2 stories; brick veneer.

Tex., Orange—E. W. Brown, Jr., will erect dwelling; hollow tile stucco; A. Babin, Archt., Blanchette Bldg., Beaumont.

Va., Richmond—E. L. Pelouse will erect dwelling in West End.

Va., Richmond—Jno. W. Borum will erect residence, Hanover Ave., Larchmont; Wm. B. Rudolph, Archt., 215 Arcade Bldg.

W. Va., Bluefield—Dr. E. W. Horton will erect dwelling in Montvale Addition.

W. Va., Bluefield—F. M. Sutherland will erect dwelling in Montvale Addition.

## Government and State.

N. C., Raleigh—Post Office—Treasury Department, Jas. A. Wetmore, Acting Supvg. Archt., Washington, D. C., receives bids until Aug. 28 to remodel Post Office; drawings and specifications from Custodian of building or from office Supvg. Archt.

Tex., Fort Worth—Post Office—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids until Aug. 25, for extension to workroom of Post Office; drawings and specifications from Custodian at site or from office Supvg. Archt.

## Hospitals Sanitariums Etc.

Ga., White Hall—Clarke County will erect Tubercular Sanitorium on Barnett Shoals Rd. Address Dr. J. D. Applewhite, Health Board Comm., Athens.

La., Baton Rouge—Franciscan Sisters, Very Rev. F. L. Gassier, will receive bids until Aug. 31, to erect building for Our Lady of the Lake Sanitarium; about \$175,000; 4 stories; brick; composition roof; low pressure steam heat; electric lights; electric elevators; plans and specifications from Wm. T. Nolan, Archt., 1000 Canal-Commercial Bldg., New Orleans; separate bids for plumbing and heating. (Lately noted.)

Md., Baltimore—Board of Awards, Mayor Wm. F. Broening, Prest., receives bids until Aug. 16 to erect buildings for Baltimore Hospital for Communicable Diseases, Montebello; \$750,000; 7 to 9 buildings; fireproof; terra cotta, tile, slag and cement roofs; mastic, tile, oak, composition and cement floors; electric elevators; safes; metal doors; wire glass; steel sash and trim; ventilators;

E. H. Glidden, Architect, American Building; plans and specifications from office J. F. Crowther, Inspector of Bldgs., City Hall; following contractors estimating: Palmer C. Streett, 3408 Norwood Ave.; Price Construction Co., Maryland Trust Bldg.; J. L. Robinson Construction Co., Lafayette and Carrollton Aves.; Consolidated Engineering Co., Calvert Bldg.; D. M. Andrew Co., Sisson and 26th St.; Thos. J. Jones & Son, 410 W. Saratoga St.; M. A. Long Co., Munsey Bldg.; Chas. L. Stockhausen Co., Marine Bank Bldg.; Fisher & Carozza Bros. Co., Continental Bldg.; R. B. Mason, 308 W. Madison St.; Northwestern Construction Co., Lexington Bldg.; Southern Steel Construction Co., 19 E. Lombard St.

Okl., Norman—Central Oklahoma Hospital, Geo. F. Clark, Chrmn. State Board of Public Affairs, will erect ward building; Layton Smythe & Forsythe, Archts., Oklahoma City; bids opened Aug. 3.

## Hotels.

Ala., Sylacauga—H. W. C. Kelley will erect 2-story building for hotel and restaurant.

Fla., Miami—Eugene C. Stahl will erect hotel unit to Helene Apartments.

Fla., Ormand—J. P. Vining plans New Bretton Inn; Moorish type; Jas. Russell Harris, Archt., Drexel Bldg., Philadelphia, Pa.

Ga., Macon—Bruno Bukoizer, Atlanta, will erect annex to Terminal Hotel; 3 stories.

Ga., Moultrie—Chamber of Commerce is promoting erection of \$100,000 hotel.

Mo., Kansas City—C. O. Jones will erect \$400,000 apartment hotel at 911 Holmes St.; 11 stories, cafeteria and roof garden; fireproof; Brostrom & Drotts, Archts.

Mo., Kansas City—S. J. Statts, care Hotel Plaza, plans hotel and store building, 12th and Wyandotte Sts.; 10 stories and basement; concrete; hollow fireproof and interior tile; ornamental terra cotta; safes; metal doors; vaults; rolling partitions; wire glass; concrete floors; ventilators; steam heat; electric lights; contract about Aug. 1. Address McKeen & Trask, Archts., Gloyd Bldg. (Lately noted.)

S. C., Pickens—Jas. P. Carey, Jr. and W. H. Chastain will erect \$15,000 hotel in Table Rock Cove; 30 rooms; tin roof; oak floors; bids opened Aug. 1. (Lately noted.)

Tenn., Memphis—Illinois Central R. R., F. L. Thompson, Ch. Engr., Chicago, will erect 2 hotels for shop workers at repair plants; \$200,000.

Tex., Corsicana—Commercial Hotel will remodel building; steam heat; elevators; about \$45,000.

Tex., San Antonio—Travis Investment Co. will erect 9-story hotel N. Flores, Main and Travis Sts.; 175 rooms; fireproof; concrete frame; concrete roof and floors; low pressure steam heat, 2 boilers; 2 elevators; ornamental terra cotta; interior tile; metal doors; wire glass; mail chutes; vault lights; steel sash and trim; Hobart S. Green, Archt.; bids opened about Sept. 1. Address Russell C. Hill, care Rogers-Hill & Co.

Va., Winchester—George Washington Hotel Corp., Lewis F. Cooper, Prest., will erect \$350,000 building, Market and Piccadilly St.; 5 stories; 100 rooms; Clarence S. Harding, Archt., 729 15th St., N. W., Washington, D. C. (Previously noted.)

## Miscellaneous.

Ala., Tuscaloosa—Lumber Sheds—Kaul Lumber Co. will erect lumber sheds; 115,000.

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**Tex., Dallas—Home—Hope Cottage Assn.**, Mrs. Emma Wylie Ballard, Secy., Wellborn and Sylvester Sta., will erect \$40,000 cottage; 140x75 ft.; 2 stories and basement; concrete, steel and brick; slate and composition roof; wood, cement and tile floors; ventilators; steam vapor heat; electric lights; electric dumb waiters; Stearman & Son, Slaughter Bldg., contrs. for excavation foundations and basement walls; remainder of building let about Sept. 1. Address Lester N. Flint Co., Archt., Andrews Bldg.

**Va., Richmond—Camp—Carneal & Johnson,** prepared plans to remodel Pine Camp; \$75,000.

### Railway Stations, Sheds, Etc.

**S. C., Anderson—Piedmont & Northern Ry.**, E. Thomason, Vice-Prest.-Gen. Mgr., Charlotte, N. C., will erect \$50,000 passenger station; J. E. Sirrine & Co., Archts., Greenville, S. C.

### Schools.

**Ala., Mobile—Mobile County School Comms.**, S. S. Murphy, Supt., receives bids until Aug. 5 for additions to Russell School, Broad and Augusta Sts.; brick; plans and specifications from office Board of Comms.

**Ark., Biscoe—W. A. Hardy, Sec.**, Fredonia School District, receives bids until Aug. 4 to erect building; plans and specifications from Sanders & Ginocchio, Archts., Little Rock.

**Ark., Valley Springs—Methodist School**, M. J. Russell, Prest., will erect 2 dormitories and main building; native stone.

**Fla., Homestead—Dade County Board of Public Instruction, Miami,** will erect \$15,000 high school; concrete and hollow tile; composition roof; wood floors; electric lights; August Geiger, Archt., Miami. (Lately noted.)

**Fla., Leesburg—Lake County Board of Public Instruction, Tavares,** receives bids until Aug. 7 to erect \$10,000 school; 70x90 ft.; stucco and hollow fireproof tile; asphalt shingle roof; pine floors; Alan J. MacDonough, Archt., Eustis. (Lately noted.)

**Fla., West Palm Beach—Palm Beach County Board of Public Instruction, Agnes Ballard, Supt.,** will erect \$125,000 high school; 3 stories; semi-fireproof; tile roof; wood, tile and concrete floors; hollow fireproof and interior tile; rolling partitions; metal doors; wire glass; steel sash and trim; vaults; ventilators; Wm. Manly King, Archt.; bids opened about Sept. 15. (Lately noted.)

**Ga., Cave Springs—School Trustees**, J. Scott Davis, Prest., receives bids until Aug. 3 to erect building; plans and specifications at Atlanta Builders' Exchange, office School Trustees, and Lockwood & Poundstone, Archts., Forsyth Bldg., Atlanta.

**Ky., Louisville—Board of Education** will erect J. M. Atherton High School for Girls on Morton Ave.; \$350,000; Joseph & Joseph, Archts.

**La., Baton Rouge—East Baton Rouge Parish School Board**, R. C. Gordon, Prest., will erect \$40,000 high school, Istrouma Hghts.; 2 stories; brick; Wm. T. Nolan, Archt., Canal-Commercial Bldg., New Orleans. (Lately noted.)

**La., Monroe—Louisiana Training Institute** Trustees will erect \$37,500 dormitory.

**Md., Baltimore—Gilman Country School**, Roland and Belvedere Aves., will erect double house; \$22,000; 60x28 ft.; 2½ stories; 16 rooms; brick; Parker, Thomas & Rice, Archts., Union Trust Bldg.

**Miss., Catchings — Consolidated School Dist.** Trustees, J. A. Boykin, Prest., Rolling Fork, receive bids until Aug. 7 to erect school and teacherage; plans and specifications at

office Chas. Deas, Archt., Goodwyn Institute, Memphis, Tenn.

**Miss., Gitano (P. O. Soso)—School Trustees** will receive bids until Aug. 8 to erect building.

**Miss., Hattiesburg—Leaf River School District** will erect \$30,000 school near Hattiesburg; brick; wood floors; N. W. Overstreet, Archt., Jackson. Address W. D. McKenzie. (Lately noted.)

**Miss., Magnolia—City** will vote on \$11,000 school improvement bonds. Address School Board.

**Miss., Meridian—City Council** authorized election on \$125,000 bonds for school improvements and school for whites in Marion Park and \$25,000 bonds to extend and repair present schools. Address School Board.

**Miss., Morgan City—Morgan City Consolidated School Dist.** will vote Aug. 3 on bonds to erect annex to present building. Address School Trustees.

**Mo., St. Louis—Board of Public Service**, Room 208 City Hall, receives bids until Aug. 8 to erect 3 dormitories for St. Louis Training School for Feeble Minded; \$144,000; plans and specifications at office Bd. of Public Service. (Lately noted.)

**N. C., Charlotte—Board of School Comms.**, H. P. Harding, Secy., receives bids until Aug. 8 to erect Second Ward School, Alexander and Stonewall Sts.; brick and concrete; fireproof; 30 classrooms; domestic science and manual training depts.; drawings and specifications from office Mr. Harding and from L. L. Hunter, Archt.

**N. C., Concord—School Board**, A. S. Webb, Secy., will erect addition to Grammar School Sayre, Archt., Anderson, S. C.; bids opened Sayre, Archt., Anderson, S. C.; bids opened Aug. 1. (Lately noted.)

**N. C., Marshville—School Trustees**, T. G. Collins and others, will erect 6-room building with auditorium to seat 400.

**Okla., Nuyaka—School Board** will erect building; \$30,000 bonds voted; 2 stories and basement; brick.

**Okla., Tulsa—Board of Directors, School Dist. No. 4, R. Y. Evans, Clk.**, R. F. D. 2, Box 50, will erect building; Cross & Saunders, Archts., Room 16, Nebraska Bldg.; bids opened July 31.

**S. C., Fairforest—District School Trustees**, E. E. Crow and others, are receiving bids to erect building; plans and specifications at office of J. B. Aiken, 212 Southeastern Life Bldg., Greenville, and S. P. Tinsley, Archt., Harris Bldg., Spartanburg. (Lately noted.)

**S. C., Greenville—Board of Education**, Dr. J. L. Mann, Supt., will remodel residence on Vardry St. for 8-room school, renovate present schools, erect primary schools, etc.

**Tex., Center—School Trustees**, J. A. Sanders, Prest., will erect auditorium and classrooms to Center High School; brick; bids opened Aug. 1. (Lately noted.)

**S. C., Kershaw—School Trustees**, J. M. Lowry, Secy., receive bids until Aug. 7 to erect high school; plans and specifications at office Lafaye & Lafaye, Archts., Columbia.

**Tenn., Memphis—University of Tennessee** plans \$200,000 building for medical department.

**Tex., Friona—School Board** will erect \$60,000 building; 20 rooms; E. F. Rittenberry, Archt., Amarillo.

**Tex., Hempstead—Board of Education** will erect 2-story brick and concrete school annex; Alfred C. Finn, Archt., Houston.

**Tex., Hull—Hull Independent School Dist.** will erect \$100,000 building; 2 stories; brick and concrete; Alfred C. Finn, Archt., Houston. (Lately noted.)

**Tex., Port Arthur—Port Arthur Independent School Dist.** Trustees will erect additions to high school and DeQueen schools; Wm. B. Ittner, Archt., Board of Education Bldg., St. Louis. (Lately noted.)

**Tex., Teague—School District Trustees** will repair and equip 3 buildings; \$20,000 bonds voted. (Lately noted.)

**Va., Norfolk—City School Board**, E. L. Myers, Chrmn., Comm., Bankers Trust Bldg., receives bids until Aug. 8 to erect annex to Patrick Henry School; plans and specifications at office B. B. Spigel, Archt., Virginia National Bank Bldg. (Lately noted.)

**Va., Radford—School Board**, W. K. Burnett, Div. Supt., East Radford, receives bids until Aug. 15 to erect primary school; 4 rooms and basement; stone and brick; plans and specifications at office Burnett, Dixon & Burnett, Archts., Bristol, Tenn.

**W. Va., Clarksburg—Coal Dist. Board of Education**, H. F. Fossitt, Secy. will erect 4-room brick building with assembly room at Glen Falls, 2-room frame buildings at Arlington and Chiefton, remodel school at Northview, Ziesing and Despard; bids opened Aug. 3; plans and specifications at office Stephen W. Ford, Archt., Latstetter Bldg.

**W. Va., Malden—Board of Education**, J. E. White, Prest., will erect 2 additional classrooms to Midway School; W. C. Clarkson, Secy., 2506 Washington St., Charleston.

### Stores.

**Ark., Searcy—Mrs. Lucy Critz** will erect brick building on Center St.

**Fla., Vero—C. A. Routh** will erect 2-story concrete store and apartments; 50x65 ft.; hollow tile; Johns-Manville roof; wood floors; electric lights; Ed. Sandison Archt.; owner builts.

**Fla., West Palm Beach—R. W. Washington** \$20,000 addition to store on Rosemary St.; 42x120 ft.; stone and concrete; H. A. Augustus, Contr.

**La., New Orleans—J. P. Schaeffer** will erect store, N. Rampart and Iberville Sts.; fireproof; 3 or 4 stories; brick; Rathbone De-Buys, Archt., Hibernalia Bldg. (Lately noted.)

**Mo., Clayton—W. Loomstein**, 1707 Tower Grove Ave., St. Louis, will erect \$65,000 store and apartment building, De Mun St.; 2 stories; 65x70 ft.; brick; Wedemeyer & Nelson, Archts., Wainright Bldg., St. Louis.

**Mo., Kansas City—A. U. Morse**, 708 American Bank Bldg., will erect store, 1521-23 Baltimore Ave.; 2 stories and basement; brick and concrete; stone trim; Hans Von Unwerth, Archt., 509 Finance Bldg.

**Mo., Kansas City—Jno. W. Soden** will expend \$15,000 to remodel 2-story building; 75x115 ft.; brick; composition roof; wood and concrete floors; S. E. Edwards, Archt., Massachusetts Bldg.

**Mo., Kansas City—Davidson Furniture Co.**, 1204 Main St., will erect 3-story addition to and remodel Keystone Building, 1320 Main St.

**Mo., Springfield—Rogers-Baldwin Hardware Co.**, will remodel building; Earl Hawkins & Co., Archts.

**N. C., Winston-Salem—R. S. Galloway** will erect store on Trade St.; \$23,000; 3 stories; brick; plate glass front.

**Tex., Dallas—Mrs. Emma Murphy** will erect store at 1921 N. Washington Ave.

**Tex., Dallas—Bush & Gerts Piano Co.** will erect 1-story addition and install new front to Bush Temple Building; sprinkler system, lighting, etc.

**Va., Norfolk—C. C. Couper** will erect store and office building, Bank and Market Sts.: 3 stories; brick.

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Va., Richmond—Duplex Envelope Building Corp., Arthur D. Jones, Prest., incptd. with capital stock \$250,000; plans to erect number of stores at West Broad and Laurel Sts.

### Theaters.

Fla., Fort Pierce—R. N. Koblegard, Washington, D. C., and E. R. Minshall, Tulsa, Okla., will erect \$150,000 building, Pine St.; 2 stories; 6 stores; 8 offices and theater to seat 1200; Jno. R. Sherwood, Archt.

Mo., Independence—Elliott Theater Corp., A. E. Elliott, Prest., Grand Ave., Kansas City, will erect \$65,000 motion-picture theater; 2 stories and basement; 40x164 ft.; brick and terra cotta; stone trim; to seat 1200; R. E. Peden Co., Archt., 945 New York Life Bldg., Kansas City. (Lately noted.)

Va., Richmond—A. L. Straus and E. H. Gunst will erect theater at 7th and Broad Sts.; \$350,000 to \$400,000.

W. Va., Charleston—Charleston National Bank will erect moving picture theater, Summers St. and Postoffice Sq.

### Warehouses.

Ala., Sylacauga—Baton Wholesale Grocery Co., will erect warehouse.

Ky., Louisville—Gavronsky-Gatz Co. pur-

chased property of Kentucky Distilleries & Warehouse Co. and will remodel warehouse, erect several warehouses, remodel boiler room, mill and distillery elevator for grain elevator.

Ky., Louisville—Hillerich-Bradsby Co.; \$11,632 warehouse, Preston and Finzer Sts.; 46x112 ft.; 2 stories; brick; Sanders & Weinadel, Archts.

Mo., St. Louis—Reliable Automatic Sprinkler Co., 292 Avenue B, will erect \$35,000 warehouse and workshop; 44x100 ft.; 2 stories; concrete and steel; creosote wood block floors. Address Thos. J. Sheehan Co., 1428 Olive St.

N. C., Sanford—Lee Warehouse Co., O. P. Makepeace and others, will erect cotton warehouse; fireproof; 10,000 bales capacity.

N. C., Weldon—Weldon Storage Warehouse Co., Geo. E. Ransom, V.P., will erect cotton warehouse; \$25,000 to \$60,000; fireproof; bids opened Aug. 1. Address V. W. Price.

Tex., Electra—Magnolia Petroleum Co., Dallas, will erect warehouse. (See Gas and Oil Enterprises.)

## BUILDING CONTRACTS AWARDED

### Apartment Houses.

D. C., Washington—F. R. White and Chas. Foley; \$200,000 building, 1614 17th St., N. W.; 8 stories; concrete and brick; F. H. Gore, Contr.

Fla., Miami—W. H. Bishop, Phila., Pa.; \$13,000 Spanish Mission building, 1413-15 Ocean Dr.; reinforced concrete and hollow tile; stucco; 4 apartments; tile baths; screened porches; Murphy beds; Henry La Pointe, Archt.; J. M. Knight Co., Contr., both Miami.

Ga., Atlanta—Ernest D. Duncan will erect Pershing Point Apts. at Pershing Point, Peachtree and W. Peachtree Sts.; \$750,000; 9 stories; 100-ft. frontage on each street; brick, limestone and terra cotta; hardwood floors; tile baths; elevators; 100 apartments; G. Lloyd Preacher & Co., Archts.; Gude & Co., Contrs.; G. L. Miller Co., arranging finances.

Md., Baltimore—M. D. Swartz, convert building into apartments; tin roof; E. G. Blanke, Archt., 532 N. Calvert St.; Mervis Construction Co., Contr.

### Association and Fraternal.

La., New Orleans—Stevedores & Longshoremen Assn.; remodel and erect addition, Lafayette and Poydras Sts.; \$25,950; Montz & Maroney, Archts.; W. A. Reed, Contr.

Md., Baltimore—Imperial Order Red Men, Tecumseh Tribe No. 108; \$30,000 lodge building, 3600-02 Hickory Ave.; 2½ stories; 69.3x43.9 ft.; brick; Jos. H. Stelnacker, Archt., 28 Sanford Ave., Catonsville; G. Walter Tovell, Contr., 403 W. Monument St.

Tex., Texarkana—Border Lodge No. 672, A. F. & A. M.; \$55,000 building, 7th and Olive Sts.; 50x132 ft.; Acme brick; stone columns and trim; hardwood, pine and tile floors; metal ceilings; city lights; marble base in lobby, banquet rooms, etc.; Stewart Moore, Archt.; Harris & Echols, Contrs.

### Bank and Office.

Ala., Birmingham—Dr. W. C. Gerwin, 612 Tuscaloosa Ave.; \$75,000 bank, store and office building, 108-10 N. 21st St.; 3 stories, brick; composition roof; tile and oak floors; city heat and lights; W. M. Welton,

office building, 108-10 N. 21st St.; 3 stories; brick; composition roof; tile and oak Archt., 19th floor American Trust Bldg.; Inglenook Construction Co., Contr.

Ark., Blytheville—J. W. Bader and H. O. Hansen Construction Co., have contract to erect \$15,000 office building; 2 stories; steel columns, girders and sash; 3 stores on first floor; 11 offices above.

Mo., Kansas City—Chicago Estates Co., New York Life Bldg.; \$160,000 building, 10th and Walnut Sts.; 8 stories and basement; 48.5x110.6 ft.; reinforced concrete; concrete and tile floors; city steam heat; high-speed electric elevators; hollow fireproof and interior tile; steel sash and trim; metal ceilings; ornamental terra cotta; metal doors; vault lights; J. C. Sutherland, Archt., Interstate Bldg.; Mosby-Sutherland Construction Co., Contr., 903 New York Life Bldg.

### Churches.

Fla., Lakeland—Dixieland M. E. Church, South; \$60,000 building; about 60x100 ft.; concrete and brick; tile and slate roof; cement and pine floors; electric lights; Mr. Hosford, Archt., Lakeland; Wade & Chaffin, Contrs., Lake Wales. Address C. W. Wade, Sup't, 1002 Pennsylvania Ave., Lakeland.

Md., Baltimore—Faith Evangelical Lutheran Church, Wolfe and Federal Sts., Rev Luther M. Hunt, Pastor; church, Sunday school and rectory, Wolfe St. and North Ave.; Gothic design; \$60,000; 51x84 ft.; stone; slate roof; hot water; electric lights; Robert L. Harris, Archt., 13 W. Saratoga St.; Lohmuller Building Co., Contr., 3001 Greenmount Ave.

S. C., Charleston—Catholic Church, Shepard St. near Coming St.; \$17,000; Gothic design; brick; Palmer-Spivey Co., Contr.

W. Va., Wheeling—First Presbyterian Church; \$15,000 addition, 1301 Chapline St.; kitchen and Sunday school rooms; C. W. Bates, Archt.; Ogden & Bauer, Contrs.

### City and County.

dition to city hall; 74x96 ft.; 2 stories; concrete beams and pilaster, and cement block walls; felt roof; concrete and wood floors; G. L. Pfeiffer and G. J. O'Reilly, Archts.; materials bought; C. W. Noel, contr. at \$26,758.

Va., Rustburg—Clerk's Office — Campbell County Board of Supervrs.; \$20,000 building

for clerk's office; fireproof Craighill & Cardwell, Archts.; W. T. Jones, Contr.; both Lynchburg.

Va., Norfolk—Jail—City, Chas. E. Ashburner, Mgr.; alter cells in city jail; \$22,267; Pauly Jail Building Co., Contr., St. Louis.

### Dwellings.

Ala., Tuscaloosa—J. T. Pullen; \$20,000 to \$25,000 dwelling, 14th St. and Greensboro Ave.; 1 story; pressed brick and hollow tile; oak floors; 11 rooms; M. L. Waddell, Contr.

Ala., Tuscaloosa—McAllister Realty Co., let contracts for 7 dwellings; also plans 3 more.

Ark., Charleston—Price & Sanders, Mulberry, have contract to erect two 8-room bungalows.

Ark., Pine Bluff—Mrs. L. Mohler; residence; Drake & Adams, Contrs.

Ark., Pine Bluff—J. E. Williams; residence; Drake & Adams, Contrs.

D. C., Washington—Morris Cafritz, 913 15th St., N. W.; \$45,000 store and dwelling; 50x130 ft.; brick; slate roof; pine or oak floors; hot water heat, \$2000; electric lights; Morris Cafritz Co., Inc., Contr.

Fla., Eustis—A. H. Cata, First State Bank; bungalow, Mary and Lemon Aves.; C. Z. Osborn, Contr.

Ga., Macon—Beverly Place Development Co., C. C. Porter, Prest.; 30 dwellings; about \$7500 each; about 35x40 ft.; 2 stories; brick veneer; tile, slate and Johns-Manville asbestos roofs; concrete and hardwood floors; plaster board; ornamental terra cotta; interior tile; wire glass; steel sash and trim; hot water heat, about \$500 each; Happ & Shelverton, Archts.; Walter F. Thomas, Contr.

Ga., Macon—W. T. Anderson; dwelling in Shirley Hills; contract let.

Ga., Macon—P. T. Anderson; dwelling in Shirley Hills; contract let.

Ga., Macon—Custis Nottingham; dwelling in Shirley Hills; contract let.

Ga., Macon—J. T. Oliphant; dwelling in Shirley Hills; contract let.

Ga., Macon—Geo. E. Patterson; dwelling in Shirley Hills; contract let.

La., New Orleans—G. Briwa; dwelling, St. Patrick and Bienville Sts.; Herbert Betzer, Archt., 812 N. Claiborne St.; Geo. Oberling, Contr., 1614 Elysian Fields.

La., New Orleans—Mutual Building & Home Assn.; 2 frame duplex dwellings, Broadway and Spruce St.; \$22,000; Denis & Handy, Contrs.

La., New Orleans—Dixie Homestead Assn.; \$9200 duplex, Adams St. near Jeannette St.; A. C. Williamson & Co., Contrs.; also \$5690 1-story frame dwelling, N. St. Patrick St. near Iberville St.; George Oberling, Contr.

La., New Orleans—J. Netter; duplex dwelling, Broadway and Elm Sts.; \$11,000; W. C. Keeman, Contr.

Md., Baltimore—West Baltimore Realty Co.; 10 dwellings, Baltimore St. near Garrison Lane; two, 21.8x32 ft. and eight, 21.4x32 ft.; \$59,550; stone and brick; asphalt roofs; concrete and hardwood floors; hot water heat; interior tile; ventilators; electric lights; E. H. Browne, Archt., Equitable Bldg.; P. C. Savole Co., Inc., Contr., Garrison Lane.

Md., Baltimore—Alex. M. Lerch, 47 Rosekemp Ave.; \$3200 dwelling, Ailsa Ave. and Chopanoke Rd.; 26 x 26 ft.; George Wessel, Archt., 2752 Winchester St.; M. R. Lerch, Contr., 4337 Harford Rd.; also two \$1000 dwellings, Iona Terrace near Harford Rd.; 28 x 28 ft.; all 2½ stories; frame; slate roof; hot water heat; M. R. Lerch, Archt., Contr. for latter two.

Md., Baltimore—Park Heights Manor De-

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velopment Co., will erect 22 bungalows, Bland and Maple Aves. near Midwood Ave., Maple Ave. near Glen Ave.; Winner Ave. near Rockwood Ave.; total \$66,000; 1½ stories; frame. Allied Construction Co., Contr.

Md., Baltimore—Edw. L. Winder, V.P., G. Ober & Sons Co.; \$15,000 dwelling and garage, Warrenton Rd. near Charles St.; 3 stories; frame; 34x34 ft.; slate roof; hot air heat; Mottu & White, Archts., 324 Charles St.; G. Walter Tovell, Contr., Eutaw and Madison Sts.

Md., Baltimore—Dr. Harvey G. Beck, 20 E. Preston St.; \$18,000 dwelling and garage, Northway near Greenway; 55x35 ft.; and 22x22 ft.; slate roof; hot water heat; 2½ stories; brick; E. L. Palmer Jr., Archt., 513 N. Charles St.; Gladfelter & Chambers, Contrs., 36th St. and Roland Ave.

Md., Baltimore—Albert A. Esterman, The Nelmar; \$25,000 Colonial dwelling, Powhatan Ave. near Hilton St.; 41x40 ft.; 2 stories; brick and stucco; 2 baths; Stanislaus Russell, Archt., 11 E. Lexington St.; A. F. Fedel Co., Contr., Continental Bldg.

Md., Baltimore—Wm. A. Tuerke, 212 W. Lexington St.; \$36,000 dwelling and garage, Charles Street Ave. and Bedford Pl.; 2½ stories; hollow tile and stucco; E. L. Palmer, Jr., Archt., 513 N. Charles St.; Gladfelter & Chambers, Contrs., 36th St. and Roland Ave.

Md., Salisbury—Hooper S. Miles; \$20,000 dwelling; Colonial style; 3 stories; brick; Colonial slate roof; oak and pine floors; plumbing and heating, \$3000; Theo. W. Pietsch, Archt., American Bldg., Baltimore; W. E. Booth & Son, Contrs., Salisbury.

N. C., Gastonia—W. T. Love; \$30,000 dwelling, S. Chester and 2nd Aves.; 10 rooms; John F. Clemmer & Co., Contrs.

Okl., Oklahoma City—South Oklahoma Town Co., J. W. S. Hutchings, V.P.; 100 dwellings, Westwood addition near Pottersburg; \$500,000; Frank Hoopes Home Building Co., Contr.

Okl., Tulsa—J. F. Goodner; \$12,000 dwelling, 1239 S. Norfolk St.; 2 stories; G. D. Morrow & Son, Contrs.

Okl., Tulsa—W. A. Goodner; \$16,000 dwelling, 1243 S. Norfolk St.; 2½ stories; G. D. Morrow & Son, Contrs.

Okl., Tulsa—W. P. Henry; \$25,000 dwelling, 1108 E. Woodward St.; 2 stories; G. D. Morrow & Son, Contrs.

Okl., Tulsa—E. P. Nevin; \$24,000 dwelling, 1219 E. 21st Pl.; 2 stories; G. D. Morrow & Son, Contrs.

Okl., Tulsa—L. S. Randolph; \$25,000 dwelling, 1103 E. 19th St.; 2½ stories; G. D. Morrow & Son, Contrs.

S. C., Greenville—C. J. Morgan will erect \$12,000 dwelling and garage, E. Washington St.; 32x60 ft.; brick veneer; 2 stories; Martin & Ward, Archts.; W. T. Loftis, Contr.

Tex., Dallas—M. A. English; 100 dwellings and apartments, English Place; \$2500, \$3000 and \$6000 each; 4 to 8 rooms; frame; shingle roofs; concrete, hardwood and pine floors; plaster board; gas heat; city lights; M. M. Mayfield, Archt.; English & English, Contrs., 1312½ Commerce St. Address owner, care contrs.

Tex., El Paso—H. P. Hodfield & Co., 103 Texas St.; 6 bungalows, Alexander Addition; 5 rooms; brick and stone; composition roofs; hardwood floors; Arcola heat; \$30,000; H. P. Ponsford & Sons, Contrs.

Tex., San Antonio—H. M. George; Colonial bungalow at Woodlawn Pl.; brick and tile terrace; Willis Ranney, Engr. in charge of construction.

Tex., San Antonio—Norvel Chittem; \$22,-

000 dwelling in Terrell Hills; tile and stucco; Atlee B. and Robert M. Ayres, Archts.; James Aiken, Contr.

Tex., San Antonio—Ed. H. Kifer; \$10,767 dwelling on Terrell Rd.; 2 stories; frame; Atlee B. and Robt. M. Ayres, Archts.; J. M. Oldham, Contr.

Tex., San Antonio—Karl Johnson; frame and tile dwelling, McCullough and Huisache Sts.; garage; Beverly W. Spillman, Archt.; K. G. Granberg, Contr.

Tex., San Antonio—Frank M. Lewis; \$17,760 dwelling on Encino Ave., Alamo Heights; 2 stories; frame stucco or hollow tile; Adams & Adams, Archts.; Chas. Webb, Contr.

Tex., San Antonio—H. B. Thompson Co., Archts., Dallas, let contract for \$50,000 dwelling in Terrell Hills; tile and stucco.

### Hospitals Sanitariums Etc.

Ala., Birmingham—Railroad Brotherhoods will remodel building at 5th Ave., north, and 24th St. for Birmingham General Hospital, Jno. D. Hall, Prest.; \$50,000; Inglenook Construction Co., Contr.

Ark., Little Rock—City, Ben D. Brickhouse, Mayor; complete city hospital; \$227,000; 5 stories; concrete; steam heat; hollow fireproof and interior tile; hardwood and concrete floors; ornamental terra cotta; metal doors; wire glass; steel sash and trim; Jno. P. Almand, Archt., Boyle Bldg.; Stewart-McGehee Construction Co., Contr.; O. M. Stockton, vacuum cleaning machine; Pettit-Galloway Co., heating; Otis Elevator Co., 2 electric elevators.

S. C., Greenwood—Greenwood Hospital Assn., Mrs. E. D. Andrews, Prest.; \$22,000 addition to hospital; 2 stories; about 38x75 ft.; brick veneer; metal shingle roof; rift pine floors; 1-pipe steam heat; electric lights; Jas. C. Hemphill, Archt.; Stepp & Wilkinson, Contrs.

### Hotels.

Fla., Tallahassee—J. H. Orr has contract to erect hotel.

Fla., Tallahassee—J. R. Randall; improvements to 3-story, frame hotel; \$15,000; O. C. Parker, Contr.

Ga., Macon—Murphy, Taylor & Ellis and Jesse B. Hart; rebuild Brown House; \$75,000 to \$100,000; 4 stories; 90 rooms; 7 stores on first floor; shower and tub baths; Happ & Shelverton, and Dunwoody & Oliphant, Archts.; R. H. Smalling & Sons, Contrs.

Tenn., Chattanooga—J. B. Pound; remodel Eastern Hotel; install passenger elevator; gravel roof; finish lobby in tile with marble walls; metal doors; wire glass; mail chutes; W. H. Sears, Archt.; Jno. M. Burger, Contr.

Tex., Kennedy—P. R. Goff; 15-room addition to Goff Hotel; \$15,000; Newman Bros., Contrs.

### Miscellaneous.

La., New Orleans—Market—New Prytania Market Co., Chas. F. Buck, Prest.; \$30,000 market, Prytania and Lion Sts.; 1-story; steel and concrete; Sam Stone, Jr., Archt.; G. F. Favrot, Contr.

Tex., San Antonio—Home—Protestant Home for Aged; \$10,000 building; R. F. Newman, Archt.; A. E. Rheiner & Co., Contrs.

Va., Richmond—Home—R. M. Anderson & Co., have contract to erect \$50,000 home for girls in Highland Park; 2 stories; brick and frame; slate roof; wood floors; steam heat; electric lights; Carneal & Johnston, Archts.

### Schools.

Ala., Conner—See Ala., Irondale.

Ala., Huntsville—Madison County Board of

Education; remodel West Huntsville Consolidated High School; J. N. Williams, Contr.

Ala., Irondale—Jefferson County Board of Education; Dr. N. R. Baker, Supt., Birmingham; 8-room brick school at Irondale; \$25,842; Waller & Bonham, Contr.; 4-room brick building at McDonald's Chapel; \$19,842; 4-room tile building at Trussville; \$12,940; Miller Bros., Contrs., for both structures; 4-room stucco and tile building at Corner; \$19,710; Mann Bros., Contrs.; 4-room addition to school at Tarrant City; \$7785; Inglewood Constr. Co., Contr.; all contractors Birmingham; D. G. Whildin, Title Guaranty Bldg., Birmingham, architect for all structures.

Ala., McDonald's Chapel—See Ala. Irondale.

Ala., Tarrant—See Ala., Irondale.

Ala., Trussville—See Ala., Irondale.

Ark., Hughes—School Board will erect building; H. A. Pankey, Contr., Shaw, Miss.

Fla., Macclenny—Baker County Board of Public Instruction, J. D. Dugger, Chrmn.; \$21,945 high school; 2 stories; 6 classrooms and auditorium; brick and frame; Jefferson D. Powell, Archt., Bisbee Bldg.; W. T. Hadlow, Contr., both Jacksonville.

Ky., Bowling Green—Board of Education; \$120,000 high school; 173x140ft.; 2 stories and basement; brick; stone trim; built-up gravel roof; maple floors; heating not let; Clifford Shopbell & Co., Archts., Evansville, Ind.; Forbes Mfg. Co., Contr., Hopkinsville.

Ky., Calhoun—Board of Education; \$48,000 high and graded school; brick; 12 rooms, gymnasium and auditorium to seat 600; Jno. T. Waller, Archt., Hopkinsville; W. M. Lockett and Mack Hagan, Contrs., Calhoun.

La., Clinton—Silliman College for Girls, Rev. T. H. Ziemer, New Orleans, Chrmn., Bldg. Comm.; expend \$25,000 to reconstruct 3 buildings; Peter Torre, Jr., Archt., Canal Commercial Bldg.; Haffner & Taylor, Contr., both New Orleans.

La., Lake Charles—Sisters of Blessed Sacrament; 2-story chapel; \$18,500; Diboll & Owen, Archts., 406 Interstate Bldg., New Orleans; Geo. D. Price, Contr., Lake Charles.

Mo., Kansas City—Board of Education, J. B. Jackson, Secy., Library Bldg.; \$11,000 addition to Blenheim School, 71st and Olive Sts.; 1 story and basement; brick; stone trim; C. A. Smith, Archt., 602 Finance Bldg.; Crosby-Elmer Constr. Co., Contr., 60th and Forest Sts.

N. C., Asheville—City, Mayor Gallatin Roberts, Chrmn., Advisory School Comm.; \$79,900 school, south Asheville; 3 stories; auditorium to seat 600, 13 classrooms; built-up stone; mosaic tile, mastic and maple floors; J. W. East, Archt.; McDowell & Roberts, Contrs.

N. C., Boone—Appalachian Training School, B. D. Daugherty; \$100,000 administration building; 195x150 ft.; 3 stories; brick, steel and frame; asbestos slate roof; concrete and rift pine floors; steam heat; electric lights; hollow fireproof and interior tile; vaults; H. A. Underwood, Archt., Raleigh; Poe-Triplett Construction Co., Contr., Lenoir.

N. C., Durham—Durham County Board of Education, Jno. W. Carr, Jr., Supt.; \$47,000 school, West Durham; 150x150 ft.; 1 story; brick and hollow tile; Johns-Manville built-up roof; concrete and hardwood floors; metal ceilings; steam heat, \$4795; Linthicum & Linthicum, Archts., Raleigh; Thompson & Cannady, Contrs., Durham.

N. C., Fremont—School Board, J. B. Lane, Chrmn.; \$80,000; reinforced concrete; Benton & Benton, Archts.; Joe Stout & Co., Contrs., both Wilson.

N. C., Rosewood—Board of Education; 12-

room high school; \$45,000; G. Lloyd Preacher & Co., Archts.-Engrs., Raleigh; W. P. Rose, Contr., Goldsboro.

N. C., Winstonburg—School Board; \$40,443 building; 10 rooms and auditorium; G. Lloyd Preacher & Co., Archts.-Engrs., Raleigh; J. W. Jones, Contr., Goldsboro; J. L. Powers, Bennettsville, S. C., plumbing, heating and lighting.

Okla., Haileyville—City Board of Education, W. A. Hower, Clerk; addition to high school; 3 classrooms and auditorium 38x72 ft.; brick; wood floors; built-up asphalt roof; vapor heat; A. C. Davis & Son, Archts., Shawnee; F. D. Hill & Son, Contrs., Ada.

S. C., Columbia—School Commrs., A. C. Moore, Chrmn.; high school addition; \$78,810; 40x180 ft.; fireproof; tin roof; rift pine and tile floors; steam heat; Jas. B. Urquhart, Archt.; Caughman Contracting Co., Contr.

S. C., Furman—Furman University, Lester G. Furman, Secy., Board of Trustees; rebuild James C. Furman Hall of Science, lately noted burned at loss of \$50,000; Frank Perkins, Archt., 225 Fifth Ave., New York; Gallivan Building Co., Contr., Greenville.

Tex., Dallas—Southern Methodist University; steel stands for athletic stadium, Armstrong Field; seat 3000; Austin Bros. Contrs.

Tex., Fentress—Board of Education; \$30,000 brick school; auditorium to seat 700; W. G. Biggs, Contr., Austin.

Tex., Kaufman—School Board, W. W. Biard, Prest.; \$60,000 high school; C. H. Page & Bro., Archts., Austin; Hunecke & Gore, Contrs., Hugo, Okla.; Everreadu Plumbing Co., Dallas, plumbing, \$4008; J. L. Martin, Austin, heating and wiring, \$6667 and \$971.

Tex., Mexia—School Board, David Murphy, Secy.; \$150,000 high school; 172x116 ft.; brick; concrete and wood floors; composition roof; DeWitt & Lemmon, Archts., Southern Life Bldg., Dallas; Sloan & Spoots, Contrs., Fort Worth.

Tex., Pierce—Pierce Independent School Dist., F. W. Clark, Secy.; 1-story building; 2 classrooms and auditorium; McLeland & Fink, Archts., Woolworth Bldg., Houston; C. E. Joplin, Contr., Wharton.

### Stores.

Ala., Andalusia—A. C. Darling; store and wareroom on S. Cotton St.; brick and concrete; contract let.

Ark., El Dorado—Wallace McWilliams; 3 brick stores at Elm and Cleveland Sts.; E. A. Horton, Contr., Pine Bluff.

Fla., Tampa—Sanchez & Haya Real Estate Co.; building for post office, stores and offices, 142x95 ft.; ordinary construction; Francis J. Kennard, Archt.; Logan Bros., Contrs.

La., Baton Rouge—Mrs. Sylvan Tobias; \$30,000 store, 131x100 ft.; brick walls; tile

partitions; wood floors; Chas. H. Charlton, Jr., Archt.; Heartfield & Heartfield, Contrs., 525 Jackson St.

N. C., Winston-Salem—R. S. Galloway; \$23,000 store, exclusive of plumbing and heating; 50x90 ft.; brick and semi-mill construction; tar and gravel roof; maple floors; W. C. Northup, Archt.; Fogle Bros. Co., Contrs.

Tex., Brady—Bell & Ogden; 3 fireproof stores; contract let.

Tex., Houston—W. W. Gaston; \$16,000 store and apartments, Welsch and Taft Sts.; 2 stories; 3852 ft.; brick veneer; composition roof; wood floors; Jones & Tabor, Archts.; J. J. Green, Contr.

W. Va., Welch—O. J. Douglas; \$40,000 store and apartment building, McDowell St.; 55½x57 ft.; concrete, brick and hollow tile; Johns-Manville built-up roof; hardwood and concrete floors; metal doors; steam heat; electric lights; elevator; Wyson & Jones, Archts., Princeton; Chas. H. Smithey, Contr., Welch.

### Warehouses.

Tex., Houston—Hogan Allnoch Drygoods Co.; \$93,000 warehouse; 100x125 ft.; 4 stories; brick and hollow fireproof tile; tar and gravel roof; hardwood and cement floors; plaster board; metal doors; wire glass; steel sash and trim; Sanguinet, Staats & Gottlieb, Archts.; Don Hall, Contr., both Carter Bldg.

## MACHINERY, PROPOSALS AND SUPPLIES WANTED

**Amusements**—Southwestern Traction Co., W. P. Welty, Secy., Fort Worth, Tex.—Correspondence with amusement companies.

**Angle Irons**.—State Mfg. Co., 22nd St. DeBree Ave., Norfolk, Va.—Names and addresses of Baltimore or Philadelphia mfrs. of galvanized angle irons, long lengths.

**Bagging and Ties**.—T. C. Kyle, of Crowder Mchy. & Supply Co., Crowder, Miss.—Prices on bagging and ties.

**Boiler**.—Duncan Machinery Co., (Mchy. Dealers), Dempster Bldg., Knoxville, Tenn.—Lowest dealers' prices on 10, 12, 15 or 20 H. P. second hand return tubular boiler, or second hand Scotch marine with fixtures and fittings complete.

**Bridge Construction**.—Mobile County Board of Revenue and Road Commrs., Mobile, Ala.—Bids until Aug. 14 for creosoted timber bridge over Dog Creek at Eariville; 30,600 Ft. B. M. of creosoted lumber and timber; 57 creosoted pile; plans, etc., on file and from L. E. Prouty, County Highway Engr.

**Bridge Construction**.—State Highway Dept., Jefferson City, Mo.—Bids until Aug. 11 for following:

Dunklin County, Federal Aid Project No. 183, Sections B and C, on State road from Dexter to Kennett, through Malden;

Sta. 4 plus 35, over Drainage Ditch; 50-ft. and two 20-ft. I-Beam spans; wood floor; 18-ft. roadway; 2 reinforced concrete pile bents; 2 concrete piers;

Sta. 10 plus 62; over Drainage Ditch; 80-ft. steel truss span; wood floor 18-ft. roadway; 2 reinforced concrete abutments;

Sta. 30 plus 45, over Holcomb Lateral Drainage Ditch; 45-ft. I-Beam span; creosoted wood floor; 18-ft. roadway; 2 reinforced concrete pile bents, skewed;

Sta. 130 plus 05, over Drainage Ditch; 20-ft. steel truss span; creosoted wood floor; 18-ft. roadway; 2 reinforced concrete abutments;

Sta. 336 plus 20, over Drainage Ditch; 39-ft. I-Beam span; creosoted wood floor; 18-ft. roadway; 2 reinforced concrete abutments;

Sta. 411 plus 97, over Drainage Ditch; 30-ft. I-Beam span; 2 reinforced concrete abutments, skewed; M. S. Murray, Div. Engr., Sikeston, Mo.

**Bridge Construction**.—Jones County Court, Herbert Gillis, Chancery Clerk, Ellisville, Mo.—Bids until Aug. 9 to erect steel bridge across Morris Mill Creek on Ellisville-Morriston road; plans, etc., on file.

**Bridge Construction**.—F. H. Wharton, City of Miami, Fla.—Bids until Aug. 21 for 500-ft. bridge over Miami River at Southwest Second Ave.; double leaf steel bascule span; concrete piers and embankment approaches; 115-ft. clear span; 30-ft. roadway; 170 tons structural metal machinery; 2700 sq. yds. concrete; 26 tons steel; plans, etc., from Chas. W. Murray, Director of Public Service and Welfare, and Harrington, Howard & Ash, Consit. Engrs., Kansas City, Mo.

**Bridge Construction**.—Bowie County, Commissioners Court, O. B. Pirkey, County Judge, New Boston, Tex.—Bids until Aug. 4 to build Sulphur River Bridge at Pettis' Ferry, in Cass and Bowie Counties; plans, etc., from County Clk., New Boston, and Hess & Skinner, Engrs., Dallas, Tex.

**Bridge Construction**.—City Commrs., E. C. Crow, City Clk., Huntington, W. Va.—Bids until Aug. 8 for reinforced concrete bridge across Four Ploe Creek at 5th St.; 40-ft. span; 24-ft. driveway; A. B. Maupin, City Engr.

**Bridge Construction**.—Union and Crittenden Counties, Norman H. Orcutt, City Engr., Morganfield, Ky.—Bids in about 6 weeks for steel bridge across Tradewater River; \$25,000.

**Bridge Construction**.—State Road Commr., E. B. Carskadon, Secy., Charleston, W. Va.—Bids until Aug. 15 for following projects:

116, Kanawha County—Witcher Bridge, No. 772, over Witchers Creek; 65-ft. steel span superstructure.

3179, Kanawha County—Cedar Grove Bridge No. 773, over Kelly's Creek; 85-ft. steel span superstructure concrete substructure.

3135-B, Kanawha County—Hugheson Bridge, No. 783, over Hughes Creek; 80-ft. steel span superstructure.

Clay County—Hartland Bridge No. 805, over Elk Creek; concrete substructure.

3185, Pocahontas County—Bartow Bridge No. 829, over East Fork of Greenbrier River; concrete arch; two 56-ft. spans.

Putnam County—Poca Bridge No. 618, over Pocatalico River; 180-ft. span steel truss superstructure; Ashler masonry substructure.

3096, McDowell County—East Keystone Bridge No. 727, over Elkhorn Creek; 65-ft. steel span; 5-ft. sidewalk; Ashler masonry substructure.

3059, Logan County—Clothier Bridge No. 810, over Spruce Fork; 130-ft. steel superstructure; Ashler masonry substructure.

3059, Logan County—Sharpless Bridge No. 826, over Spruce Fork; 130-ft. steel span superstructure; Ashler masonry substructure.

3059, Logan County—Seng Camp Bridge No. 830, over Seng Camp Creek; concrete through girder, 45-ft. span; Ashler masonry substructure.

3062, Wyoming County—Allen Crk. Bridge No. 730, over Guyandotte River; concrete arch; two 75-ft. spans.

3126, Brooke County—Cross Creek Bridge No. 819, over Cross Creek; concrete arch; 90-ft. span.

3110, Braxton County—Granny Crk. Bridge No. 807, over Granny Creek; concrete deck girder, 50-ft. span; concrete substructure; pile foundation.

3011-B, Hampshire County—Junction Bridge road, No. 802, over Mill Creek; concrete slab; six 20-ft. spans, concrete substructure.

3013, Hardy County—Reynolds Gap Bridge No. 808, over Mud Lick Run; concrete through girder; two 40-ft. spans, concrete substructure.

3014, Pendleton County—Judy Bridge No. 809, over N. Mill Creek; concrete through girder; two 40-ft. spans, concrete substructure.

3105, Pendleton County—Reeds Creek

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Bridge No. 828, over Reeds Creek; concrete slab; two 22-ft. spans, concrete substructure; plans, etc., on file; Geo. H. Hill, Office Engr.

**Bridge Construction.**—Waller County, A. G. Lipscomb, County Judge, Hempstead, Tex.—Bids until Aug. 7 for 200-ft. panel bridge with foundation piers and approach, 4 mi. west Hempstead; plans, etc., from Howe & Wise, County Engrs., First National Bank Bldg., Houston, Tex., or from State Highway Engr., Austin, Tex.

**Burner (Oil) Farmers Cooperative Creamery Co., Fairhope, Ala.**—Prices on oil burner for 10 H. P. vertical boiler, for crude oil, also on burner for kerosene and distillate.

**Cement.**—D. L. Elder, Mayor, Hopewell, Va.—Cement for street paving; L. A. Sims, Engr.

**Brick (Burning).**—Cherokee Brick Co., W. E. Dunwody, V. P., P. O. Box No. 235, Macon, Ga.—Interested information relative to burning brick with oil.

**Cars (Dump).**—D. C. Elphinstone, 408 Continental Bldg., Baltimore, Md.—15-20 yard 2 way standard gauge western dump cars, for use in West Virginia. (For Rental).

**Castings (Steel and Malleable).**—Rodgers & Co., Knoxville, Tenn.—Names and addresses of mfrs. of steel and malleable castings.

**Chairs.**—City of Greenville, Ala., J. L. Grant, Clerk—Names and addresses of mfrs. of common cane bottom chairs.

**Coal Unloading Machinery.**—T. Herbert Allen, Kenbridge, Va.—In market for coal unloading machinery for moving coal from car to storage bin.

**Concrete Paving Reinforcing.**—J. B. Hardin, County Engr., Greenville, N. C.—Concrete paving reinforcing for 12 mi. concrete pavement.

**Cotton Gin.**—Hairley & Son Co., J. W. Hairley, Mgr., Route 1, Box 4, Pharr, Tex.—Prices and outside aid in establishing gin.

**Concrete Mixer.**—J. S. Carey, Shreveport, La.—Concrete mixer.

**Crane.**—Tennant-Lovegrove Co., Union National Bank Bldg., Houston, Tex.—In market for traveling crane, 15 ton, hand operated, 35-ft span, in good used condition.

**Dikes and Mattresses.**—U. S. Engrs. Office, 320 Custom House Bldg., New Orleans, La.—Bids until Aug. 7 for brush filled dikes and fascine mattresses at Southwest Pass, Mississippi River; information on application.

**Directory, Bulletin and Sign Board (Metal and Marble).**—Treasury Dept., Office of Supv. Archt., Washington, D. C.—Bids until August 25 at office of Custodian, Honolulu, Hawaii and at office of Supv. Supt., San Francisco, Calif., for furnishing and delivering f. o. b. Honolulu, T. H., metal and marble director bulletin and sign boards for U. S. P. O. at Honolulu; information on application from Custodian, Honolulu, or from Supv. Room 403 P. O. Bldg., San Francisco, Calif.

**Ditching Machine.**—Cohoon Bros. Co., (Machinery Dealers), Orlando, Fla.—Names and addresses of mfrs. of small ditching machines for digging out shallow ditches for sub-irrigation; ditches to be about 3-ft. deep and 1 to 3 ft. wide.

**Drainage.**—Drainage Commrs. of Washington County, Greenville, Miss.—Bids until Aug. 1 for clearing Boga Phalia and Six Mile Bayou; specifications, etc., on file at office of Secy., Weinberg Bldg., Greenville; O. C. Kulicka, Ch. Engr.

**Dredging.**—United States Engineer's Office, Norfolk, Va.—Bids until August 23 for dredging on 40 ft. channel, Norfolk Harbor; information on application.

**Electrical Fixtures.**—Theo. C. Link, P. O. Box 636, Jackson, Miss.—Bids until Aug. 3

for electrical fixtures for academic building at Mississippi Normal College, Hattiesburg, Miss.

**Electric Light Plant Extension.**—Easton Utilities Coms., Easton, Md.—Bids until August 17 for furnishing materials, equipment and for erection of addition to present electric light plant, including turbine-generator, exciter set, switchboard, condenser, spray nozzles, cooling-pond, cooling tower, excavation, concrete work and electric construction; will also receive proposals for supplying Diesel or semi-Diesel generating equipment, to operate in parallel with existing steam engine driven generator; specifications, etc., on file with Secy. of Easton Utilities Co., or from Carl J. Klefer, Consit. Engr., 810 Fourth National Bank Bldg., Cincinnati, Ohio.

**Electric Substation.**—City of Norfolk, Va., Chas. E. Ashburner, Mgr.—Bids until August 17 for constructing electric sub-station and distribution in connection with Municipal Terminal Project, Norfolk; work includes construction and sub-station bldg. and complete installation of substation equipment, underground distribution and street lighting to serve grain elevator now under construction and portion of adjoining grounds; plans and specifications on file at office of Folwell-Ahlstrom Co., 600 Seaboard Bank Bldg., Norfolk.

**Electrical Equipment.**—Standard Electric Mchly. Co., (Mchly. Dealers), 7-9 E. Hill St., Baltimore, Md.—In market for 100 H. P. slip ring motors continuous duty constant speed; pulley sizes, rails and drum starters; 3 phase, 25 cycle, 440 volt, 750 R.P.M. 2 or 3 bearings (Inquiry 285); 75 H. P. slip ring motor continuous duty constant speed; pulley sizes, rails and drum starters, 3 phase, 60 cycle, 440 volt—prefer 900 or 1200 R.P.M.; 75 to 100 K. V. A. and 1-37½ to 50 K. V. A. belted alternators, 3 phase, 60 cycle, 2300 volts, 900 to 1200 R.P.M. with excitors; also sw. brds. (Inquiry 284); specify Inquiry number on offers.

**Electric Elevator.**—Treasury Dept., Supvg. Archt's Office, Washington, D. C.—Bids until Aug. 9 for installing one electric elevator in East wing of main hospital building, U. S. Veterans Hospital, Norfolk, Va., Tanners' Creek Site; Jas. A. Wetmore, Acting Supvg. Archt.

**Engines.**—Warner Moore & Co., Richmond, Va.—In market for second-hand engines, cylinder 16x20 or 22 slide valve about 150 R. P. M.; state price, name of maker and where located.

**Engine (Oil).**—See Ice Plant Equipment.

**Excelsior Machinery.**—J. R. Sunith, Paducah, Ky.—Names and addresses of mfrs. of excelsior (packing material) making mchly.

**Fencing.**—White Hills Farms Co., Little Blue, Mo.—Prices on fencing.

**Fertilizer Drill.**—Co-operative Fruit Co., Inc., C. L. Johnson, Prest., Lake Wales, Fla.—Prices on commercial fertilizer drill, 8, 10, 12-ft. wide.

**Filter Alum.**—Board of Awards, Richard Gwin, City Register, City Hall, Baltimore, Md.—Bids until Aug. 9 for furnishing and delivering 2000 tons of filter alum to Water Dept.; specifications may be obtained from office of Wm. Megraw, Water Engr.

**Generator.**—Hackley Morrison Co., Inc., (Mchly. Dealers), 1708 Lewis St., Richmond, Va.—One 100 KW. 3 phase, 60 cycle, 2300 volt belted generator or direct connected unit of this size.

**Gravel.**—Carroll County Fiscal Court, Carrollton, Ky.—Bids until Aug. 4 for gravel in quantities of 5000, 10,000 and 20,000 cu. yds. for Carrollton and Worthville road and road between Carrollton and Gallatin County line; Projects Nos. 50 and 13, Primary System of State roads; J. L. Booth, Carroll County Road Engr.

**Ground Limestone.**—Buck Glass Co., Fort Ave. and Lawrence St., Baltimore, Md.—Correspondence with producers of ground limestone for agricultural purposes; low rates to northeastern North Carolina.

**Heating Plant.**—City, O. F. Holcombe, Mayor, Houston, Tex.—Bids until Aug. 6 at office City Secy., to install fuel oil heating system in city hall; information from City Mgr.

**Ice Plant Equipment.**—F. B. Krieder, Clermont, Fla.—Prices on storage room, freezing tank, refrigerating machine, oil engine or motors, etc.

**Incubators.**—White Hill Farms Co., Little Blue, Mo.—Prices on mammoth incubators.

**Laths (Spruce).**—Youmans & McCraney, Columbus, Ga.—In market for spruce laths.

**Levee Construction.**—Board of Directors of Garland City, Ark.—Bids opened July 29 for construction of loop levee about 6 mi. below Garland City; about 120,000 cu. yds. of earth removal; information on application to C. S. Christian, Engr., Texarkana, Ark.

**Levee Construction.**—Orleans Levee Board, Frank C. Hymel, Prest., 201 New Orleans Court Bldg., New Orleans, La.—Bids until August 7 for construction of Stanton levee, approx. contents, 115,000 cu. yds.; information on application.

**Levee Work.**—Secy.-Treas. of Board of Mississippi Levee Comms., Greenville, Miss.—Bids until Aug. 1 for construction of about 652,000 cu. yds. of levee work; information on application.

**Levee Work.**—Office Mississippi River Commsn., 1st and 2nd Districts, Custom house, Memphis, Tenn.—Bids until Aug. 14 for constructing about 2,900,000 cu. yds. of earthwork in Upper and Lower St. Francis and White River Levee Dists.; information on application.

**Locomotive.**—Southern Iron & Equipment Co., 219 Grant Bldg., Atlanta, Ga.—In market for narrow gauge saddle tank locomotive 10 to 20 tons.

**Locomotive Crane.**—Hackley Morrison Co., Inc., (Mchly. Dealers), 1708 Lewis St., Richmond, Va.—In market for locomotive crane.

**Lumber (Hickory Blanks).**—Consolidated Handle Co., Fishertown, Pa.—Correspondence with firms supplying hickory blanks for handles.

**Mining Equipment.**—M. O. & W. Engineering Corp., J. L. Orr, Secy., Norton, Va.—Data on all sizes cars, tipple mchly., mining equipment, etc.

**Miscellaneous Supplies.**—Panama Canal, A. L. Flint, Gen. Pur Officer, Washington, D. C.—Bids until August 16 for corrugated roofing, wrought iron or steel pipe, range boilers, water buckets, wire netting, paint, varnish, polishing wheels, rotators, cotton line, writing paper, etc.; information (Schedule No. 1489) on application on to Panama Canal, 24 State St., New York City, Fort Mason, San Francisco, Cal.

**Motor.**—See Ice Plant Equipment.

**Motors.**—J. L. Barr, Consit. Engrs., 224 St. Paul St., Baltimore, Md.—Prices on following motors, either new or second hand; one 30 H. P., 400 A. C., 220 volts, 60 cycle three phase, 870 R.P.M., slip ring type; one 7½ H. P., one 3 H. P., one 2 H. P. 1200 R.P.M. squirrel cage motors same as above.

**Motors.**—Hackley Morrison Co., Inc., (Mchly. Dealers), 1708 Lewis St., Richmond, Va.—In market for two 100 H. P. slip ring motors, one 75 H. P., 220 volt, 3 phase, 60 cycle.

**Motors.**—Warner Moore & Co., Richmond, Va.—In market for one 75 H. P. motor, two 100 H. P. motors, one 125 H. P. motor,

squirrel cage, 3 phase, 60 cycle, 220 volt, \$900 R. P. M.; second-hand; state price, condition, name of maker and where located.

**Motors.**—Duncan Mchly. Co., (Mchly. Dealers), Dempster Bldg., Knoxville, Tenn.—Prices on following 3 phase, 60 cycle, 220 volt, AC motors, rebuilt, new and used machines; one 75 H. P., one 100 H. P., two 25 H. P., two 15 H. P., 10 H. P., 7½ H. P., 5 H. P.

**Paper Pots.**—Wm. H. Case, 1125 26th Ave., N., St. Petersburg, Fla.—Prices on several thousand paper pots 4-in. and 6-in. size for transplanting plants.

**Paving.**—City, Jewell Miller, City Auditor, Chillicothe, Mo.—Bids until Aug. 10 to repair paving on Irving Ave. .

**Paving.**—Louis Brownlow, City Mgr., Petersburg, Va.—Bids until Aug. 10 for 14,400 sq. yds. concrete road paving; plans, etc., from R. D. Budd, City Engr.

**Paving.**—Lon Barringer, City Manager, Charleston, W. Va.—Bids until Aug. 4 to grade, curb, pave, etc., several streets; 24,000 sq. yds.; plans, etc., from Ernest Bruce, City Engr.

**Paving.**—Board of Awards, Wm. F. Broening, Pres., Baltimore, Md.—Bids until Aug. 9 for grading and paving with cement concrete, following:

Alleys in Cont. No. 90.

Footways in Contrs. Nos. 33, 34, 35 and 38; plans, etc. on file; A. E. Christlif, Highways Engr.

**Paving.**—City, St. Charles, Mo.—Bids until Aug. 7 for concrete brick roadway on W. Clay St. from Main St. to city limits. Address The Mayor.

**Paving.**—H. L. Carroll, City Clk., Ashland, Ky.—Bids until Aug. 7 to grade and pave with bituminous macadam or Kentucky asphalt following.

Kentucky Ave. from Midland Trail to Cumberland Ave.; Cumberland Ave. from Midland Trail to Kentucky Ave.; Central Parkway from Midland Trail to Kentucky Ave.; 6607 sq. yds. paving; grade and pave with brick or bituminous macadam following:

44th, 45th, 49th, 52nd and Maple Sts., and Williams Ave.; 10,757 sq. yds. paving; plans, etc. from City Engr.

**Paving Materials.**—John N. Brown, City Clk., Gallatin, Mo.—Paving materials, including asphalt, cement and stone for 20,000 sq. yds. pavement, and 6000 ft. curb and gutter; Shockley Engineering Co., Engr., Graphic Arts Bldg., Kansas City, Mo.

**Paving.**—Board of Commrs., L. D. Newman, Commr. Streets and Sewers, Huntington, W. Va.—Bids opened Aug. 3 to grade, curb and pave following: Robey road, Oakland Ave., 26th, 27th and 36th Sts.; plans, etc. from A. B. Maupin, City Engr.

**Paving.**—Board of Commrs., G. B. Rowland, Mayor, Raeford, N. C.—Bids until Aug. 10 for laying streets; 15,000 sq. yds. sheet asphalt, bitulithic, bituminous concrete, etc.; plans, etc., from Taplin & Perkins, Consit. Engrs., High Point, N. C.

**Paving.**—S. H. McKay, City Clk., Nashville, Tenn.—Bids until Aug. 16 for concrete curbing and sidewalks on following: 7th, Foster, Buchanan, Hayes, Villa, 2nd, 10th, 19th and 20th Sts.; McMillin, Shelby, and 6th Aves., Terrace Place; also paving with granite block, Buchanan and S. 2nd Sts.; with bituminous concrete, Hayes, Villa, Heffernan, 7th, 10th Sts., Terrace Place, Shelby Ave., etc.; with asphalt, Highland, Glen, Halcyon, Montrose, 19th, 20th Aves.; 13,000 sq. yds. granite blocks; 3000 sq. yds. bituminous concrete; 129,000 sq. yds. asphaltic paving; plans, etc., from Wm. W. Southgate, City Engr.

**Paving.**—City, Norman H. Orcutt, Engr., Morganfield, Ky.—Bids in about 5 weeks for 2 mi. street paving, sidewalks, curb and gutters; brick.

**Paving.**—G. H. Cairnes, City Mgr., Gainesville, Fla.—Bids until Aug. 15 for paving certain streets; 85,000 sq. yds. brick, concrete, sheet asphalt, bituminous macadam, or other material; plans, etc., on file.

**Paving.**—M. F. Lusk, Mayor, Guntersville, Ala.—Bids until Aug. 7 for street paving; 11,000 yds. chert paving; 8,000 yds. grading; 15,000 ft. curb and gutter; plans, etc., from Robt. L. Totten, Consit. Engr., 41st Brown Marx, Birmingham, Ala. (Late noted bids until July 17.)

**Plugs (Metal Wall Plugs).**—Younmans & McCrane, Columbus, Ga.—In market for metal wall plugs, "Rutty," "Niagra," Bostwick or equal.

**Portable Loader.**—Duncan Machinery Co., (Mchly. Dealers), 721 N. Central Ave., Knoxville, Tenn.—Circulars and description of portable loaders for loading ore, coal, from ground into truck or dump wagon.

**Pulverizer Outfit.**—Charles Earl Currie & Co., (Mchly. Dealers), Ashland, Ala.—In market for No. 0 Raymond Pulverizer outfit, good second hand condition.

**Printing Equipment.**—Walter Wadsworth, 437 S. Main Ave., Springfield, Mo.—Prices on equipment to publish paper 20,000 circulation, job printing.

**Retaining Walls.**—Bureau Yards and Docks, Navy Dept., Washington, D. C.—Bids until Aug. 23 for approx. 2650 ft. of concrete retaining walls at Marine Flying Field, Quantico, Va. Specifications, No. 4647; information on application to Bureau or to Commanding General, Marine Barracks; R. E. Bakenhus, Acting Ch. of Bureau.

**Road Construction.**—Adam County, Board of Supvrs., Frank V. Eisele, Clerk, Natchez, Miss.—Bids until Aug. 7 to work 27 mi. public dirt roads in Dist No. 2, and 36 mi. in Dist. No. 5; plans, etc., on file.

**Road Construction.**—Bowie County Commissioners Court, O. B. Pirkey, County Judge, New Boston, Tex.—Bids until Aug. 4 to improve certain highways in Cass and Bowie Counties; 2897 sq. yds. asphaltic paving; 136,300 lbs. plain structural steel reinforcing; plans, etc. from County Clk., New Boston, and Hess & Skinner, Engrs., Dallas, Tex.

**Road Construction.**—Bexar County, Augustus McCloskey, County Judge, San Antonio, Tex.—Bids opened July 31 for laying Pleasanton road, 2.23 mi. south of Medina River; Federal Aid Project No. 239; gravel base; bituminous topping; 67,171 lbs. rein. steel; 2 bridges; 3 culverts; R. E. Kilmer, County Highway Engr.

**Road Construction.**—Randolph County, H. C. Kesling, County Clk., Elkins, W. Va.—Bids until Aug. 8 to grade 3 mi. Seneca Pike between Po Run and James Rainie's residence; plans, etc., from Edw. G. Elliott, Acting County Engr., or Div. Engr., Keyser, W. Va.

**Road Construction.**—State Highway Dept., Jefferson City, Mo.—Bids until Aug. 14 for following:

Dallas County, 12,311 mi. State road from Springfield to Sedalia, Springfield to Jefferson City, and Bolivar to Buffalo; State Aid Project No. 20,183; H. P. Mobberly, Div. Engr., Woodruff Bldg., Springfield, Mo.

Scott County, 7,329 mi. State road from Sikeston eastward and westward; gravel surface; Federal Aid Project No. 5; M. S. Murray, Div. Engr., Sikeston, Mo.; grade and construct drainage structures on all.

**Road Construction.**—State Highway Dept.,

Jefferson City, Mo.—Bids until Aug. 15 for 1,014 mi. State road from Gainesville to Arkansas State line; Ozark County, State Aid Project No. 20,187; grade and construct drainage structures; J. H. Long, Div. Engr., Willow Springs, Mo.

**Road Construction.**—State Highway Dept., Jefferson City, Mo.—Bids until Aug. 10 for following:

Pettis County, 3,274 mi. State road from Lamonte eastward and westward through Lamonte Special Road Dist.; State Aid Project No. 20,172; A. C. Lingley, Div. Engr., Reliance Bldg., Kansas City, Mo.

Macon County, 2,903 mi. State road from La Platte southward; Daniel Boone Trail; State Aid Project No. 20,180; C. P. Owens, Div. Engr., Howe Bldg., Macon, Ga.; grade and construct drainage structures on all.

**Road Construction.**—Carter County Road Comsn., 23, E. H. Little, Chrmn., Elizabethton, Tenn.—Bids until Aug. 22 to macadamize, grade and construct drainage structures on 2 mi. road; T. P. Toncray, Engr.

**Road Construction.**—Charleston County Sanitary and Drainage Comsn., 39 Broad St., Charleston, S. C.—Bids until Aug. 24 for 2,171 mi. hard surfaced road between Navy Yard and Port Terminals; 20,375 sq. yds. concrete surfacing; State Project; plans, etc., from J. W. Martin, Engr., Sanitary and Drainage Comsn., Charleston, and State Highway Engr., Columbia, S. C.

**Road Construction.**—Grainger County Highway Comsn., C. H. Roach, Chairman, Rutledge, Tenn.—Bids until Aug. 19 for 50 mi. grading and 25 mi. macadamizing; \$204,000; plans, etc., from Engr.

**Road Construction.**—McLennan County, J. P. Lester, County Judge, Waco, Tex.—Bids opened Aug. 1 for following:

7.62 mi. Mart road, in State Highway No. 2-B; 23,028 cu. yds. crushed rock; 11,487 cu. yds. gravel surfacing; 61,150 gals. asphalt topping; 57,991 lbs. rein. steel; 207 sq. yds. reinforced concrete pavement.

5.89 mi. Dallas road, on State Highway No. 6, from Elm Mott to point 6 mi. north; 2162.6 cu. yds. crushed rock; 11,623.7 cu. yds. gravel; 25,928 gals. bituminous material; 25,468 lbs. rein. steel; Mantan Hannah, County Engr.

**Road Construction.**—State Highway Comsn., 6th Dist. Office, Charlotte, N. C.—Bids until Aug. 14 for 1.14 mi. State Highway in Union County between city limits and west city limits of Waxhaw, Route No. 23; State Project No. 893; plans, etc., on file and from State Highway Comsn., Raleigh.

**Road Construction.**—State Roads Comsn., 601 Garrett Bldg., Baltimore, Md.—Bids until Aug. 8 for following concrete roads:

Allegany County, 3 mi. State Highway from Cumberland toward Oldtown; Contract A-21.

Frederick County, 2 mi. State Highway from Libertytown toward New Windsor; Contract F-51.

Howard County, 2 mi. State Highway from West Elkridge toward Pfeiffer's Corner; Contract HO-24; alternate.

Anne Arundel County, 1 mi. State Highway from Jacobsville toward Lakeshore; Contract AA-20.

Prince George's County, 1 mi. State Highway from Riggs School toward Hyattsville; Contract P-38.

Prince George's County, 1 mi. State Highway from end Contract P-24 toward Ashton; Contract P-33.

**Road Construction.**—Carroll County Fiscal Court, Carrollton, Ky.—Bids until Aug. 4 to gravel following:

10.8 mi. road from city limits of Carrollton to western limits of Ghent, and from Gallatin County line to eastern limits of

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Ghent; Project No. 13, State Primary System. 9 mi. Carrollton and Worthville road from city limits of Worthville to intersection of Carrollton and Eagle roads and Carrollton and Ghent roads; Project No. 50, State Primary System; J. L. Booth, Carroll County Road Engr.

**Road Construction.**—Hays County Commsr., Court, J. R. Wilhelm, County Judge, San Marcos, Tex.—Bids opened Aug. 3 for 3.02 mi. bituminous treatment on Highway No. 29-A, Martindale road; 33,591.6 sq. yds. 1½-in. bituminous treatment, using asphaltic oil crushed rock, or 1½-in. limestone rock asphalt; cold application; plans, etc., from J. W. Puckett, County Engr., San Marcos, or State Highway Dept., Austin, Tex.

**Road Construction.**—Orangeburg County Highway Commsn., Orangeburg, S. C.—Bids until Aug. 22 to surface 1.594 mi. Orangeburg-Bamberg road, between point near Edisto River and Survey Station 600 X 35.5; 16,837 sq. yds. plain concrete surfacing, or bituminous concrete surfacing, 5-in. concrete base; Federal Aid Project No. 28-B; plans, etc., on file or from State Highway Commsn., Columbia, S. C.

**Road Construction.**—State Highway Dept., Jefferson City, Mo.—Bids until Aug. 5 for 6.7 mi. State road from Paris eastward, westward and northeastward; State Aid Project No. 20,181; grade, etc.; H. D. Griffith, Div. Engr., Hannibal, Mo.

**Road Construction.**—State Highway Dept., Jefferson City, Mo.—Bids until Aug. 9 to improve highway in Lincoln County; Projects Nos. 5, 13, 18, 20 and 22.; T. A. Halley, County Highway Engrs.

**Road Construction.**—State Highway Dept., Jefferson City, Mo.—Bids until Aug. 11, for following roads:

Dunklin County, 5.801 mi. State road from Dexter to Malden, through Kennett; gravel surfacing; Federal Aid Project No 183, Section B.; \$101,390.

Dunklin County, 8.426 mi. State road from Dexter to Malden, through Kennett; concrete and gravel; Federal Aid Project No 183, Section C.; \$222,717.11.

**Road Construction.**—State Road Commsn., E. B. Carskadon, Secy., Charleston, W. Va.—Bids until Aug. 15 for 2 mi. grading and paving with waterbound macadam; Brooke County, Project No. 3126; Geo. H. Hill, Office Engr., Charleston.

**Road Construction.**—Sumter County Permanent Road Commsn., Sumter, S. C.—Bids until Aug. 10 for hard surface pavement, grading and constructing drainage structures on following:

Sumter-Manning road, 6.1 mi.

Shiloh road, 7.6 mi.

Camden road, Sec. "C," 4.2 mi.; Lee, Penneill & Murray, Engrs., Sumter, S. C.

**Road Rollers.**—F. B. Harding, County Engr., Greenville, N. C.—10-ton road rollers for 12 mi. concrete pavement; rent or buy.

**Rolling Partitions.**—J. C. Hemphill, Greenwood, S. C.—Rolling partitions.

**Rope (Steel).**—Rodgers & Co., Knoxville, Tenn.—Names and addresses of mfrs. of steel rope.

**Roofing, etc.**—White Hill Farms Co., Little Blue, Mo.—Prices on roofing, etc.

**Saw Gummer.**—Battery Machine Co., Rome, Ga.—In market for good, second-hand automatic circular saw gummer, capacity up to 36-inch.

**Rubber Boots and Rubber Coats.**—Marine Corps, Quartermaster's Dept., Washington, D. C.—Bids until Aug. 4 for furnishing 2000 pairs rubber boots and 3000 rubber coats for delivery to Depot Quartermaster, U. S.

M. C., 1100 S. Broad St., Phila., Pa.; information on application. (Schedule No. 51.)

**Seawall Construction.**—Port Tampa City, Fla., H. J. Hanks, Mayor.—Bids until Aug. 11 for constructing concrete seawall and dredging 6-ft. channel at foot of Prescott St., in Old Tampa Bay; plans on file with McElroy Engineering Co., Giddens Bldg., Tampa, or at office of Mrs. R. E. Davis, Clerk.

**Sewer Construction.**—Board of Public Works, Nashville, Tenn.—Bids opened August 1 for construction of clay pipe sewer in Beach Ave. and McFerrin Ave. and various other streets; information on application.

**Sewer Construction.**—City of Plattsburgh, Mo., J. D. Baker, Mayor.—Bids until Aug. 8 for material, labor and constructing sanitary sewers in Districts Nos. 1, 2, and 3, following approx. quantities: Dist. No. 1, trenching and backfilling 14,415 ft. of pipe cut from 0-in. to 18-in., 375 cu. yds. solid rock; 14,435 ft. of vit. sewer pipe, cut 8-in. to 15-in.; 80 ft. 8-in. to 16-in. cast iron pipe; 352 6-in. on 8-in., 18 6-in. on 10-in., 20 6-in. on 12-in., 13 6-in. on 15-in. Y's; 14 flush tanks; 32 manholes; 1 drop manhole; 57-ft. Ex. depth manholes; 2600 ft. ¾ gal. W. I. pipe; 14 service connections; disposal plant

—Imhoff tank, sludge bed, dosing chamber, filter bed, etc.; District No. 2; trenching and backfilling 14,415 ft. cut 0 to 14 ft., 100 cu. yds. solid rock; 9127 ft. 8-in. to 12-in. vit. sewer pipe; 192 6-in. on 8-in. Y's, 8 6-in. on 10-in. Y's, 17 6-in. on 12-in. Y's; appurtenances, 8 flush tanks; 18 manholes; 19 feet Ex. depth manholes, 1400 feet G. W. I. pipe; 8 service connections; disposal plant: Imhoff tank, sludge bed, dosing chamber; filter beds, etc.; plans from office of Mayor and City Clerk and office of Engrs., E. T. Archer & Co., New England Bldg., Kansas City, Mo.

**Sewer Construction.**—City of Houston, Tex., O. F. Holcomb, Mayor.—Bids opened July 31 for following construction work; sanitary and drainage sewers in S. End Villa and Roseland Addition; 2950 concrete bridge balusters; asphaltic treatment for wood block paving; plans and specifications at office of City Engr.

**Sewer Construction.**—E. D. Bass, Commr., Dept. of Streets and Sewers, Chattanooga, Tenn.—Bids opened Aug. 1 to construct pipe sewers and appurtenances in Gardenvshire Addition; information on application; F. K. Rossmond, City Treas.

**School Equipment.**—School Boards for Consolidated School Dist. No. 21 and Union Graded School Dist. No. 34, Stephens County, Okla., meet July 29 at Superintendent's office, Duncan Okla.—To see samples and buy equipment for 11 classrooms, auditorium and gymnasium for former and 4 rooms for latter; Glenn Bros., Archts., Walters, Okla.

**Steam Shovel.**—D. C. Elphinstone, 408 Continental Bldg., Baltimore, Md.—In market for one Marion, 21, Marion 36, Erie B, steam shovel.

**Stills.**—Hattiesburg Pine Oils Co., Hattiesburg, Miss.—Information and prices on battery of two stills, to handle about 30 tons of heavy tar and pitch residuum, to include settings, grates, supports, fronts, stack and condensers for oil content.

**Stone.**—J. B. Harding, County Engr., Greenville, N. C.—Stone for 12 mi. concrete pavement.

**Storm Water Culvert.**—Board of Pub. Wks., Felix Z. Wilson, Mayor, Nashville, Tenn.—Bids until Aug. 16 for constructing brick storm water culvert, including tailing ditches and catch basins, etc., various streets; information on application.

**Transmission Line.**—City of Pine Tops, N. C., W. E. Gobb, Clerk.—Bids until Aug. 7

for constructing approx. 1 mi. of 13,000 volt, 3 phase transmission line from Tarboro to Pine Tops; plans from office of Clerk or from E. P. Meredith, Tarboro.

**Trench Excavation.**—Bd. of Awards, Richard Gwynn, City Register, City Hall, Baltimore, Md.—Bids until Aug. 9 for trench excavation for water department; plans and specifications on file at office of Wm. A. Megraw, Water Engr., Room 207, City Hall.

**Turn Buckles.**—Rodgers & Co., Knoxville, Tenn.—In market for turn buckles in quantity; one size to take ¾-in. steel rope, and also ½-in. steel rope.

**Underground Connections.**—Board of Public Works, Nashville, Tenn.—Bids opened August 4 for installing new water service pipes, new sewer service pipes and water service repairs for portions of Buchanan, Hayes, Villa, Seventh and other street information on application.

**Valves (Water Control).**—Gorlov Heater Co., Miami, Fla.—Names and addresses of mfrs. of water control valves similar to those used on American and Humphreys Automatic water heater.

**Water and Power Plant Improvements.**—City of Quincy, Fla., J. P. Smith, Clk.—Bids until August 24 for furnishing equipment, mchly., labor and material for improvements to water and power plant, including foundations, piping, the following list of mchly. furnished, delivered, erected, ready for operation, as follows: one unaflo engine direct connected to 210 K. V. A. 225 R.P.M., 2 phase 2200 volt alternator and as an alternate a unit direct connected to 312 K. V. A. 200 R.P.M. alternator 120 lbs. steam pressure; one 3 panel switchboard; one 1000 gal. centrifugal pump and motor and one 500 gal. centrifugal pump and motor both 190 ft. head; one 500 H. P. feed water pump and heater; one motor driven air compressor 600 cu. ft.; surface condenser; 200 H. P. boiler 125 lbs. pressure; specifications on file with J. B. McCrary Engineering Corp., Engrs., Atlanta, Ga., and at office of city clerk.

**Water Supply.**—Water Commission, Tulsa, Okla., A. J. Rudd, Chrmn.—Bids during last half of Sept. for construction of Spavinaw water supply project, for which \$6,800,000 bonds have been voted; work consists of masonry and earth dam 50 ft. high, 28 mi. of 60-in. and 25 mi. of 54-in. pipe, a 78-in. tunnel, 7000 ft. long, a 350,000,000 gal. storage reservoir, a 10,000,000 gal. high pressure reservoir, and approx. 7 mi. of cast iron or steel force mains; plans and specifications completed after Aug. 15; Trammell & Holloway, Engrs., 329 Kennedy Bldg., Tulsa, Okla.; Dabney H. Maury, Consil. Engr., Chicago, Ill.

**Woodworking Machinery.**—J. S. Carey, Shreveport, La.—Woodworking Machinery.

## New Financial Corporations.

**Ark., Lamar.**—The First National Bank of Lamar, received charter from Comptroller of Currency Crissinger; capital \$25,000, incptd. by J. W. Hawkins, Prest., and I. Hawkins, Cashier.

**Ga., Macon.**—Georgia Banking Company, capital \$50,000, incptd. with Ray W. Crockett, Prest., W. E. Bozeman, Cashier, W. P. McNair and others.

**Ga., Macon.**—Georgia Finance Corporation, capital \$50,000, incptd. by H. K. Burns, Hubert M. Burns and R. A. Bloodworth.

**S. C., Charleston.**—Central Bank of Charleston, capital \$50,000, incptd. with J. Hepler, Prest., C. F. Hottinger, Vice-Prest., and C. L. Lohr, Cashier. (Lately noted.)

Tex., Austin—Austin Trust Co., capital \$50,000, incptd. by J. A. Gracy, W. M. Graham, Walter Bremond, Jr., and others.

Tex., Dallas—Guaranty Securities Co., capital \$300,000, incptd. with R. B. Stichter, Prest., A. P. Cunningham, Vice-Prest., W. W. Macbeth, Secy., and Jas. P. Griffin, Treas.

Va., Franklin — The Average Payment Plan, Inc., capital \$50,000, incptd. with E. L. Beale, Prest.; C. V. Beale, Secy.; and E. J. Beale, all of Franklin.

W. Va., Wheeling—The American Mortgage and Discount Corp., capital \$1,000,000, incptd. with Robert S. Mooney, Prest., W. H. Truschell, Secy.-Treas. A branch office has been opened in Charleston, with L. S. Carter, Mgr.

### New Securities.

Ala., Mobile—School—City and County will soon vote on \$700,000 bonds for a school. Address The Mayor.

Ala., Montgomery—Road—State, Thos. E. Kilby, Gov., sold \$3,000,000 4½% bonds to Ward-Sterne & Co., of Birmingham and Montgomery, Ala.

Ala., New Brockton—School and Light.—E. M. Dismuke, Mayor, receives bids for \$17,000 5% bonds.

Ark., Little Rock—Road—E. O. Bagley, Secy., receives bids until Aug. 10 for \$400,000 Little Rock-Hot Springs Highway Dist bonds; dated Sept. 1, 1922.

Ark., Pine Bluff—Paving—City Commsr. sold \$10,000 6% bonds to Simmons National Bank, for \$9,85.

Ark., Walnut Ridge—School—Board of Directors of Walnut Ridge Special School Dist., sold \$75,000 bonds to M. W. Elkins & Co. (Lately noted.)

Fla., Brandon—School—City voted \$20,000 bond issue. County Board of Supvrs. receives bids.

Fla., Dade City — Road—Pasco County voted \$500,000 bonds. Address County Commsr.

Fla., Fernandina—Funding and Improvement—City, W. S. Whitney, City Clerk, sold \$150,000 6% bonds to Atlantic National Bank of Jacksonville and First National Bank of Fernandina, for \$151,551.50 and accrued interest. (Lately noted.)

Fla., Fort Pierce—Road and Bridge—P. C. Eldred, Clerk, receives bids until Aug. 15 for \$50,000 6% Coupon Bonds of Special Road and Bridge District No. 2, St. Lucie County, Fla.

Fla., Homestead—Improvement—City voted on \$125,000 bonds; \$25,000 water works, \$60,000 electric, \$5000 fire department, and \$35,000 street bonds. Address The Mayor.

Fla., Howey, P. O. Yalah—School—Howey Special Tax Dist. voted \$7000 bonds.

Fla., Ocala—Improvement—City sold \$80,000 street improvement bonds to a Toledo, O. concern, for 3½ mills premium.

Fla., Miami Beach—Sewer—City, C. W. Tomlinson, Clk., voted \$125,000 bonds; \$1000 denomination; dated July 1, 1922. (Lately noted.)

Fla., Ocala—Street, Light and Water—City Commsr. will soon call bond election for \$125,000 street and \$40,000 light and water bonds.

Fla., Orlando—Improvements—City, Com-

mrs., sold \$1,400,000 bonds to Prudden & Co., Toledo, O., for par and accrued interest. (Lately noted.)

Fla., Plant City—Municipal—City voted \$150,000 bond issue. This issue was validated. Address The Mayor.

Fla., Plant City—School—Plant City Special Tax School District No. 6, will vote Aug. 22, on \$60,000 6% bonds. Address Board of Public Instruction.

Fla., Plant City—Highway—Hillsborough County will vote Aug. 1 on \$3,000,000 5% bond issue. Address County Commsr.

Fla., Quincy—Water & Light—City, J. P. Smith, Clk., receives bids until Aug. 24, for \$40,000 5% bonds; \$500 denomination.

Fla., Tampa—Highways—Board of County Commsr., Hillsborough County, will vote on \$3,000,000 5% bonds.

Fla., Tampa—Harbor—City, Wm. E. Duncan, Clk., sold \$600,000 5% bonds of \$1000 denomination to the Atlantic National Bank, Jacksonville, and Harris Forbes & Co., for \$601,925. (Lately noted.)

Fla., Vero—Improvement—City votes Aug. 18, on \$40,000 light and power plant bonds and \$10,000 city hall, fire station and jail bonds. Address The Mayor. (Lately noted.)

Fla., West Palm Beach—School — Palm Beach County Board of Public Instruction sold \$200,000 6% bonds to Bessmer Investment Co., New York City, at 107.52.

Ga., Athens—Road, Bridge and Dormitory—Clarke County Commsr., Tate Wright, Clerk and Attorney, receives bids until Aug. 22, for \$150,000 5% road and bridge, and \$50,000 5% dormitory bonds; \$1000 denomination. (Lately noted.)

Ga., Buena Vista—Water and Light—T. B. Rainey, Mayor, receives bids until Aug. 7, for \$20,000 5% improvement bonds.

Ga., Lumpkin — Courthouse — Stewart County Commsr. contemplates issuing bonds for rebuilding of courthouse.

Ga., Savannah—Road and Bridge—Chaham County, G. Reuben Butler, Clk., sold \$500,000 4½% bonds to Exchange Bank of Savannah, for \$503,132.51. (Lately noted.)

Ky., Alexandria—Road and Bridge—City will vote Aug. 5, on \$1,000,000 bond issue. Address The Mayor.

La., Alexandria—Improvement—City, J. F. Folsay, Mayor, receives bids until Aug. 28, for \$360,000 5% bond issue.

La., Arcadia—School — Bienville Parish School Board, E. H. Fisher, Secy.-Treas., sold \$100,000 6% School District No. 1 bonds to R. M. Grant & Co., at 104.28; and \$20,000 6% School District No. 16 bonds to Whitney Central Trust & Savings Bank, New Orleans, at 100.60. (Lately noted.)

La., Covington—Water and Sewer—Town, L. A. Perreand, Secy., receives bids until Aug. 18 for \$130,000 5½% 1922 bonds; \$50 denomination dated July 1, 1922.

La., Port Allen—Levee—Thomas G. Irwin, Secy. Board of Commsr. for the Atchafalaya Basin Levee Dist., receives bids until July 22, for \$250,000 bonds.

La., Tallulah—Levee—Board of Commsr. of Fifth Louisiana Levee Dist., F. H. Schenck, Prest., sold \$100,000 5% bonds to First National Bank of Vicksburg, at par. (Lately noted.)

La., Thibodaux—Improvement—Town Commsr., sold \$40,000 bonds. The Bank of Thibodaux, Bank of Lafourche and the Citizens Bank of Lafourche, bought \$10,000 worth and the Fulton Iron Works, St. Louis, bought \$21,000 worth.

Md., Annapolis—Improvements—City, Emma Abbott Gage, Clerk, receives bids until

Aug. 7 for \$72,000 4½% bonds.

Md., Baltimore—Refunding—Potomac Public Service Co., will sell \$72,000 7% sinking fund gold bonds.

Md., Laurel—Improvement—Town, Chas. E. Little, Mayor, sold \$2000 electric, \$3000 street, and \$5000 water and sewer 5% 30-yr. bonds, to Merchants Trust & Deposit Co., Baltimore, at 102.17. (Lately noted.)

Miss., Fayette—Street and Sidewalk—City, E. H. Reber, Clk., sold \$10,000 6% bonds to Mrs. B. Krauss, at par and accrued interest. (Lately noted.)

Miss., Hattiesburg—School — Board of Supvrs. sold \$50,000 5¾% bonds to Marine Bank & Trust Co., New Orleans, La. for \$50,350. (Lately noted.)

Miss., Jackson—Armory — Hinds County Board of Supvrs. contemplate calling an election for the voting of \$60,000 bonds.

Miss., Magnolia—School—City votes August 11, on \$11,000 municipal bonds. Address The Mayor.

Miss., Meridian—School—City will vote on \$150,000 bond issue, for new school. Address The Mayor.

Miss., Vicksburg—Improvement—City, J. J. Hayes, Mayor, will sell bonds voted on July 6. (Lately noted.)

Mo., Faucet—School—Consolidated School Dist. No. 3; Jas. W. Roach, Secy., Board of Education receives bids until July 29, for \$35,000 5% bonds. (Lately noted.)

Mo., Gibbs—School—Citizens will vote on July 27, on \$15,000 bonds. Address The Mayor.

Mo., Mansfield—School—Mansfield School Trustees receive bids for \$11,000 bonds. (Lately noted.)

Mo., Seymour—Streets—City votes Aug. 7 on \$3500 bond issue. Address The Mayor.

N. C., Abermarle—Street and Water—Eli Kendrick, Town Clk., receives bids until Aug. 9, for \$100,000 6% water and \$50,000 6% street bonds.

N. C., Asheville—Highway and Park—City, F. L. Conder, Secy.-Treas., voted \$200,000 highway and \$550,000 park bonds.

N. C., Asheville—School—Citizens will vote soon on \$50,000 bond issue, for Haw Creek School Dist. Mr. Wells, Supt.

N. C., Carthage—School—Carthage Graduated School Dist. voted \$65,000 school bond issue. Address School Trustees. (Lately noted.)

N. C., Concord—School—Geo. H. Richmond, City, Treas., receives bids until Aug. 3, for \$225,000 5% bonds; \$1000 denomination.

N. C., Denton—School—Trustees of Public School Dist. No. 3, sold \$20,000 6% bonds to Prudden & Co., Toledo, at a premium of \$517.50. (Lately noted.)

N. C., East Spencer—School—Town, F. S. Loflin, Clk., receives bids until Aug 1, for \$45,000 and \$15,000 bonds; \$1000 denomination.

N. C., La Grange—Sewer—City Commsr. will call election for \$50,000 bond issue soon.

N. C., Rockingham — Road — Richmond County, R. L. Johnson, Register of Deeds, receives bids until Aug. 9, for \$75,000 bonds; \$1000 denomination.

Okl., Eufaula—Bridge—McIntosh County votes Aug. 1, on \$285,000 bonds. Address County Commsr.

Okl., Pryor—School—City sold \$8240 school Dist. No. 25 bonds to W. A. Graham, a local capitalist.

S. C., Allendale—P. J. Fulmer, Clk. of Commsr., receives bids until Aug. 1 for \$15,000 coupon bonds, \$1000 denomination, 6%, dated January 1, 1922.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

S. C., Blacksburg—Paving—City voted \$30,000 bonds. Address The Mayor.

S. C., Laurens—Water, Municipal and Street—City voted on \$65,000 water, \$65,000 municipal and \$40,000 street bonds. Address The Mayor.

S. C., Lynchburg—Electric—Town, Elmer Timmons, Clk., receives bids for \$7000 15 yr. bonds.

S. C., Meggett—School—City Comms. sold \$43,000 bonds to The Exchange Bank of Meggett, for \$1300 premium. (Lately noted.)

Tenn., Chattanooga—Funding—F. J. Fuller, Vice-Prest., of Central Union Trust Co., 80 Broadway, New York City, receives bids for \$10,000 bonds.

Tenn., Jackson—Street—City sold \$125,000 4% bonds to I. B. Tigrett & Co., for par plus a premium of \$6500.

Tenn., LaFollette—School — City, W. C. Adams, Mayor, receives bids until Aug. 10, for \$55,000 6% refunding and \$10,000 6% school bonds. (Lately noted.)

Tenn., Nashville—Vladut Improvement—Davidson County Comms., sold \$375,000 4% bonds to Estabrook & Co., Hannahs Ballin & Lee—jointly, for \$378,525. (Lately noted.)

Tenn., Nashville—Street and General Improvement—Davidson County Comms., sold \$250,000 6% street and \$200,000 5% Improvement bonds, to Estabrook & Co., Hannahs Ballin & Lee—jointly for \$257,075 and \$206,000.

Tex., Lancaster—Water and Sewer—City, E. P. Anderson, Secy., receives bids until Aug. 4, for \$15,000 6% bonds, dated July 1, 1922.

Tex., Lubbock—Water and Sewer—City, Percy Spencer, Mayor, sold \$100,000 sewer and \$50,000 6% water bonds to W. A. Myrick, Dallas at par. (Lately noted.)

Tex., Boston—Bridge and Road—Bowie County Comms., O. B. Pirky, County Judge, receives bids until Aug. 14, for \$65,000 5½% bonds; \$1000 denomination. (Lately noted.)

Tex., Breckenridge—Municipal—City sold \$40,000 bonds for constructing a building.

Tex., Teague—School—City voted \$20,000 bond issue. Address The Mayor.

Tex., Eden—School — Eden Independent School Dist. voted \$18,000 bond issue. Address The Mayor.

Tex., Leonard—Paving—City voted \$25,000 bonds. Address The Mayor.

Tex., San Antonio — School — City sold \$1,000,000 5% bonds to Brown-Crummer Co., Wichita, Kan., for premium of \$16.15 per \$1000.

Va., Clintwood—W. E. Rasnick, Clk., receives bids until Aug. 14, for \$400,000 5½% Dickenson County Bonds.

Va., Fincastle—Road—Botecourt County Board of Suprs., Turner McDowell, Clk. sold \$30,000 5½% bonds, \$2500 denomination, to Bank of Fincastle. (Lately noted.)

Va., Radford—Water and Electric—City, Paul J. B. Murphy, Mgr., sold \$225,000 5½% bonds to C. W. McNear & Co., for \$237,361. (Lately noted.)

W. Va., Wayne—Road—Wayne County votes Aug. 8, on \$150,000 bond issue. Address County Comms. (Lately noted.)

### Financial Notes.

Ky., Lexington—The Phoenix and Third National Bank of Lexington, Ky., changed its title to Phoenix National Bank & Trust Company of Lexington.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Tex., Jasper—East Texas Securities Co., increased capital from \$35,000 to \$50,000.

Va., Richmond—Merchants' National Bank for Highland Park will open branch office, in part of the building used by the Highland Park Pharmacy.

Va., Richmond—Stockholders of Broad Street Bank and Church Hill Bank, contemplate consolidation of banks.

### Trade Literature.

#### Electric Light Plugs, Sockets, Etc.

Harvey Hubbell, Bridgeport, Conn., have issued several interesting folders about their electric plugs, te-taps and te-caps, receptacles, shade holders, brass shell and candle sockets, signalites, etc. These publications are illustrated and contain much interesting and important data.

#### Automatic Dump Body.

A large, folding circular issued by the Mandt Company, Keokuk, Iowa, contains many pictures showing different sizes and types of the Mandt automatic dump body which is patented and which is made in all sizes to fit any truck. Sundry other illustrations show these bodies in use for different kinds of work. Complete descriptions are also embodied in the folder which is carefully prepared with tables of dimensions.

#### Feed Water Purifiers.

The Brock Engineering Co., Inc., St. Louis, Mo., are manufacturing a water purifier for use in connection with boiler feeds, which is described in a booklet issued by them. It is stated that this new unit purifies the water prior to its entering a boiler; that there are no coils, pans or trays, and no chemicals to be used. It is further stated that there is a system of free circulation which insures delivering water at a near-boiler temperature and free of all foreign matter that can incrust on boiler tubes or plates. The booklet is fully illustrated and contains much valuable information upon the subject of pure water for boilers; there are also testimonials from users.

#### Grinders and Drills.

A new grinder for paint mills which is manufactured by the Jas. Clark, Jr., Electric Co., Inc., Louisville, Ky., is illustrated and described in the Jasco Driller for July. It is stated that this grinder saves 25 per cent of time required to groove paint mill stones as compared with a previously employed method and it also has a special drill head attachment so that it can be readily converted into a portable electric drill with one-quarter inch capacity in metal. The Clark "Sensitive" drill for jewelers is likewise described and pictured.

#### Wheels for Cars, Engines, Etc.

The tenth edition of "Wrought Steel Wheels," has been issued by the Carnegie Steel Co., Pittsburgh, Pa., giving profiles, tables, and data pertaining to wheels for steam and electric railroad service. The booklet is fully illustrated with pictures showing the contours of wheels for different purposes, and there are also sundry tables of data. Wheels for mine locomotives, industrial and mine car wheels, piston blanks, etc., are described in a separate pamphlet entitled "Industrial Wheels, Gear Blanks, and other Circular Forgings," which appears in its eleventh edition and which is prepared in the same general style. Both booklets are finely printed and are made up substantially.

#### Collapsible Canoes.

A collapsible canoe, invented by Victor Holmstrom and patented, is described and illustrated in a circular issued by Victor Holmstrom & Co., Inc., Verbena, Ala., manufacturers. It is stated that the canoe can be moved about as easily as can a suitcase, so that it may be carried without difficulty on street cars, trains, automobiles, etc., and it is light in weight. It is designed for the use of sportsmen, fishermen and others for out of doors recreation. It folds up compactly. A canoe for one person weighs 30 pounds and is nine feet long when in use; three feet when folded. A canoe for two persons weighs about 40 pounds and is 11 feet long when in use; three feet eight inches when folded. Capacities over 300 and 500 pounds, respectively.

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

#### Confidential Service Organization

The Commercial Railway & Industrial Company, with general offices at 437-A, Equitable Building, Baltimore, Md., has been organized by H. Kent McCay, and J. P. Graham, according to announcement elsewhere in this issue to render efficient confidential service to bankers, lawyers, steam and electric railway organizations, merchants and industrial corporations. This service looks to protection of plants and other property for common carriers of all kinds, public utility companies, amusement parks, mines, mills, builders, contractors, civic, county and state authorities, etc. Also for labor replacements with workers of the better types, production craftsmen for both industrial and transportation enterprises. The new organization furthermore acts as consulting engineer for various plants and also makes reports on them covering all desired information. Mr. McCay was formerly city and harbor engineer for the City of Baltimore and recently was of the construction corps of the United States Navy. Mr. Graham was formerly district manager of the Railway Audit & In-

spection Co., Baltimore branch. The former will have charge of office and financial details; the latter will have charge of field work.

#### Large Industrial Plant For Sale.

The important industrial plant of the American & British Manufacturing Corporation at Bridgeport, Conn., is to be sold by Wm. Howard Wakelee, of Southbury, Conn., according to an announcement which appears elsewhere in this issue. The entire property is to be disposed of including ten buildings, about ten acres of land, machinery, equipment and raw materials. A railroad siding extends through the property and it also has water frontage on Long Island Sound. The materials are such as are used in the manufacture of guns, ammunition and automobiles. Further particulars are given in the advertisement.

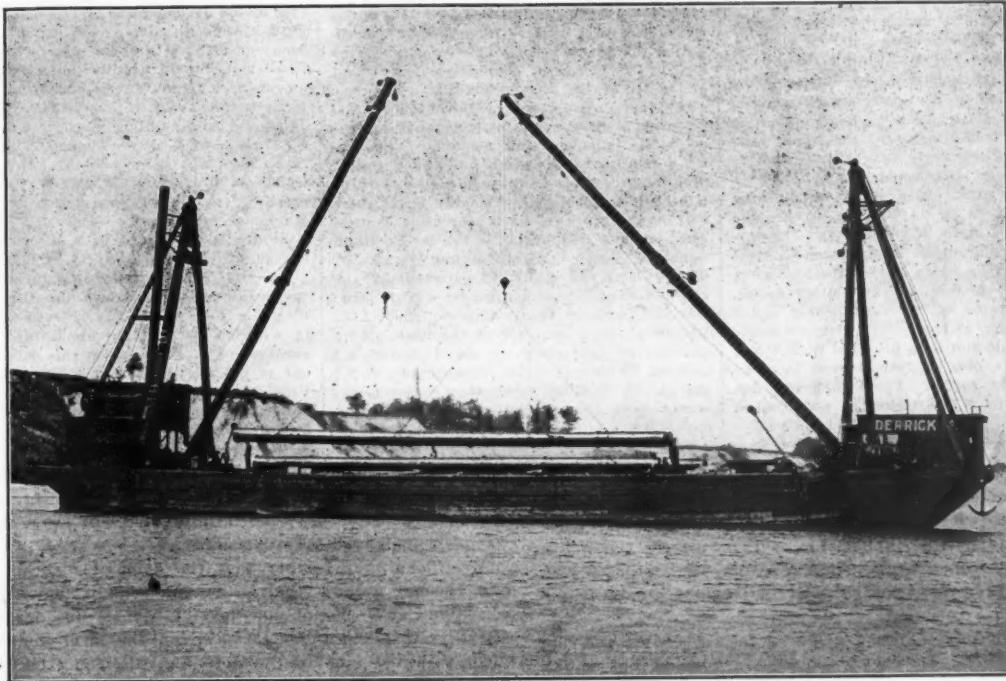
#### Resident Sales Manager Appointed.

A. A. Murphy has been appointed resident sales manager in New York City for the industrial railway paint and varnish division

# U. S. CAST IRON PIPE

FOR

## SUBMARINE INSTALLATIONS



Swinging an eighty-four foot section of thirty inch cast iron pipe into place on the bottom of Lake Michigan, thirty-five feet below the surface. Part of a three thousand foot intake line installed at the Carrollville plant of the United States Glue Company by the Edward E. Gillen Company of Milwaukee.

Where permanence is important and repairs are costly, careful purchasers specify United States Cast Iron Pipe.

*For information or quotations apply to the nearest Sales Office.*

### United States <sup>Cast</sup> Iron Pipe & Foundry Co.

General Sales Office: Burlington, New Jersey

#### SALES OFFICES:

Philadelphia: 1421 Chestnut St.  
Pittsburgh: Henry W. Oliver Bldg.  
New York: 71 Broadway  
Chicago: 122 S. Michigan Boulevard  
St. Louis: Security Bldg.  
Dallas, Tex.: Scollard Bldg.  
Kansas City, Mo.: Interstate Bldg.

Cincinnati: Dixie Terminal Bldg.  
Birmingham: 1002 American Trust Building  
Minneapolis: Plymouth Bldg.  
Cleveland: 1150 E. 26th St.  
Buffalo: 957 E. Ferry St.  
San Francisco: Monadnock Bldg.

of the Du Pont Company, with headquarters at the new office which this division has opened at 30 Church St. He has been with the company for many years and is well known in New York and neighboring territory.

#### New York Manager Appointed.

James A. Beaubien, formerly vice president and general manager of the Weber Subterranean Pump Co., has been appointed manager of the New York office of the Pennsylvania Pump & Compressor Co., of Easton, Pa., and is located at 30 Church Street, New York City. The company manufactures—in addition to its regular line of air compressors and centrifugal pumps—a complete line of air operated pumps for artesian wells.

#### Electric Fan For Ventilating Homes.

A new ventilating device for homes is the Autovent Window Ventilator which consists of a 12-inch electric fan to be mounted on the window frame inside of the upper sash by means of an angle iron frame that is held by screws. It is made in three patterns and provides for a width of window opening ranging from 25 to 44 inches. To use the fan the upper sash is lowered and its particularly valuable use is in a kitchen to expel the heat and the odors arising from cooking, but it is also used to ventilate other rooms. The fan operates at 110 volts, either direct or alternating current, the latter single phase, 60 cycle and it is provided with 8 feet of cord and a plug to take current from an ordinary light socket. These fans are distributed by L. G. Gottschall & Co., Dallas, Tex.

#### Record Production of Motor Vehicles.

228,000 motor vehicles produced in June, showing an increase of 12 per cent over May with a production in excess of 256,000 vehicles, established a new record for the industry. At this rate of production the year 1922 will see over 2,000,000 motor cars and trucks of various kinds manufactured.

The June production represents an increase of 61 per cent over June 1921. Moreover, the export demand has shown a very material improvement, total exports for the month of May 1922 being over three times the exports for the corresponding month of 1921; these cars and trucks were destined for from sixty to seventy different countries.

On July 1, says a bulletin of the National Automobile Chamber of Commerce from which the above figures are taken, there were more than 10,500,000 motor vehicles registered in the United States.

#### Well Balanced Building Program at San Antonio.

San Antonio, Tex., July 27.—[Special.]—The belief is here steadily growing stronger that San Antonio must continue its building operations at top speed for an indefinite period. This idea is based on figures prepared by the San Antonio Builders Exchange showing the extent to which the community is now under-built.

It is declared that at least \$10,000,000 will be required for new industrial, commercial and other business buildings, as well as dwellings in order to keep up with the estimated increase of 15,000 new people in the city each year. The building program is at this time well balanced, that is, activity is pronounced in commercial and industrial structures, as well as in the erection of dwellings.

#### "Kudzu," a Forage and Hay Plant.

Mr. C. E. Pleas of the C. E. Pleas Plant Company, Chipley, Fla., writes the MANUFACTURERS RECORD relative to that company's operations in the growing of Kudzu, a forage and hay plant as follows:

"Our business is primarily to grow and supply Kudzu

#### Brilliant Color Lights at an Exposition

Duplicating in many ways the spectacular lighting of the Panama-Pacific International Exposition of 1915 and supervised by W. D'A. Ryan, who was the designer at that fair, the Brazilian Centennial Exposition at Rio de Janeiro this fall will show illumination at its best. Lighting, including operation, will cost about \$500,000. The main buildings and the grounds will have light from masked cartouche and banner standards, supplemented by ornamental luminaries. Relief lighting in the towers, minarets and windows will be rose red and orange and most of the floral effects will be in masses of solid color, brilliantly featured in the illumination. Flags and special features will be illuminated by searchlights, the entire scheme being dominated by a scintillator in ever changing colors. Roof and dome of the largest building, which has a 200-foot domed tower, will contain 40,000 "Novagem" jewels that will gleam under the artificial lights as well as under the sun. On a small, rocky island a building of gothic architecture flanked by palm trees will be lighted in soft colors. From the tower there will be an aurora of seven searchlight beams. The complete installation is by the Brazilian General Electric Co., supervised by J. W. Shaffer, and the electric department of the exposition will be managed by Dr. Roberto Marinho, assisted by Dr. Eugenio Hime, A. F. Dickerson, chief engineer of the illuminating engineering laboratory of the International General Electric Co., Inc., Schenectady, N. Y., and J. W. Gosling, decorative engineer, recently spent several months in Brazil laying out plans.

#### Now In New Offices.

Godfrey M. S. Tait has removed his office and is now located at 808 18th St., N. W., Washington, D. C., where he will continue his professional work in the preparation of coal property valuations for the guidance of investors and bankers, and also for tax adjustments. He is a member of the following American organizations: Society of Mechanical Engineers, Institute Mining and Metallurgical Engineers, and Association of Engineers.

#### Important Industrial Merger.

The Foamite Firefoam Company, with general offices at 151 Fifth Ave., N. Y., and the O. J. Childs Co., Inc., of Utica, N. Y., have been consolidated under a plan which unites these important fire protection interests in a new and complete service organization. The merged companies will hereafter be known as the Foamite-Childs Corporation and as soon as possible after August 1, the executive offices will be located at Utica. W. J. Childs is president; F. M. Watters, vice president; E. Janeway, secretary; and F. J. Maginniss, treasurer. James C. Patterson will also be continued as a director in full charge of sales. The O. J. Childs Corporation has for several years functioned as the manufacturing division of the Foamite Firefoam Co., which has recently developed in addition to portable apparatus, etc., an automatic sprinkler system, this being worked out in conjunction with the Grinnell Co., of Providence, R. I. The Childs chemical and motor fire apparatus have also been widely known and appreciated for years.

plants, and secondarily to utilize any surplus acreage to grow the hay and manufacture it into meal, as alfalfa is done. Kudzu is a better hay than alfalfa and will grow on lands too poor and acid for other legumes."

Mr. Pleas says further that the demand for this forage has become greater than they can supply under present conditions and tells of one field of seventy-five acres "now standing three to four feet deep on the level and with a yield of three tons to the acre and analyzing better than wheat bran."

#### Engineering Societies Provide Employment Service.

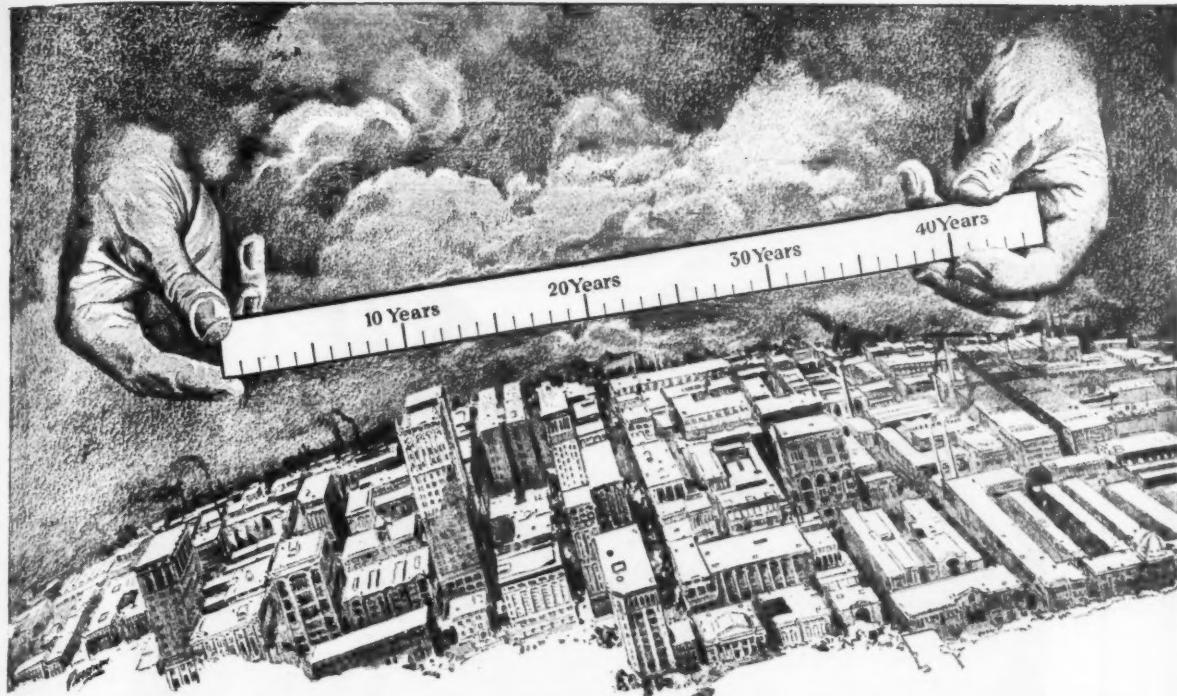
The four National Engineering Societies consisting of the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, the American Institute of Electrical Engineers, announce the inauguration of an employment service. It is intended to provide a national clearing house for engineering talent of all kinds, and is in a position to furnish civil, mechanical, electrical, appraisal, industrial and maintenance engineers and plant superintendents.

The administration of the service bureau is in charge of W. V. Brown at 29 W. 39th St., New York City.

#### Additions to Exhibit Materials.

New Orleans, La., July 28—[Special.]—The Southern Pine Association has added to its stock of exhibit material several new house models, finish panels, racks, posters and a variety of other features in preparation for exhibits, which the association will conduct at a number of state fairs this fall. The schedule will include Aurora, Ill., Oklahoma City, Okla., Memphis, Tenn., Jackson, Miss., Kansas City, Mo., and Jacksonville, Fla. A number of points in Ohio will also be included.

An eight-story office building will be erected by the Chicago Estates Company, of Kansas City, Mo. The contractor is the Mosby-Goodrich Construction Co., and the architect J. C. Sunderland, both of Kansas City.



## *Measuring Roofs by the "year-stick"*

AFTER all's said and done, there's only one way to measure roof value—that's by the "year-stick."

For when choosing a roof, the really important question is: "Which roof will last longest with the least trouble and expense for upkeep?"

In the light of long experience, the logical answer is: The Barrett Specification Roof. For in every section of the country there are roofs of this type that have been in service for thirty, forty or more years, and are still in good condition.

Despite proved durability and freedom from maintenance expense, Barrett Specification Roofs are moderate in first cost. And they provide a degree of fire protection not exceeded by any other kind of built-up roof.

It is only natural, therefore, that Barrett Specification Roofs are the choice of the leading architects and construction engineers the country over, and that today they cover a majority of all the permanent flat-roofed buildings in America.

### *The Only Bonded Roof*

Barrett Specification Roofs are not merely guaranteed—they are bonded.

When the roof is 50 squares or larger and located in a town of 25,000 or more, or in a smaller place where our inspection service is available, the owner receives, without cost, a bond issued by The U. S. Fidelity & Guaranty Company, of Baltimore, protecting him against all repair expense during the life of this bond—Type "AA" Roofs, for 20 years; Type "A," for 10 years.

Before specifying or closing contract for a Barrett Specification Roof, be sure to read carefully all the stipulations in the specifications.

*Full details regarding these Bonded Roofs and copies of the Barrett Specifications sent free on request.*

The *Barrett* Company



New York	Chicago	Pittsburgh	Detroit	St. Louis
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Salt Lake City	Milwaukee	Toledo	Columbus	Richmond
Youngstown	Bethlehem	Elizabeth	Buffalo	Baltimore
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	Vancouver	St. John, N. B.	Halifax, N. S.	

*Barrett Specification Roofs*

*Bonded for  
20 and 10  
Years*



2400 telephone wires in a cable little larger than a man's wrist.

## Science keeps down costs

When the Bell System installed its first successful telephone cable, fifty wires was the largest number that could be operated in a single cable without "cross-talk" and other interference. Today it would require 48 cables of the original type to accommodate the number of wires often operated in one cable.

Without this improvement in cable, the construction of new underground and aerial lines would have cost the Bell System upwards of a hundred million dollars more than has actually been spent. In addition, the cost of maintenance would have been greater by eighteen million dollars a year. These economies in the Bell System mean a saving in telephone rates to each individual subscriber.

In all branches of telephone practice

science has similarly contributed to economy. Even in such a comparatively small item as switchboard cords, improvements have reduced the cost of renewal by four million dollars a year.

Every new telephone added to the Bell System increases the usefulness of all telephones, but this multiplication tends likewise to increase the complications and the expense of service. The scientists of the Bell System, to offset this tendency, are constantly called upon to develop new devices which simplify complications and keep down costs.

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*For further particulars address*

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GRAND CENTRAL PALACE  
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We want to buy bonds issued by cities, towns, counties, school, road or drainage districts that you may be able to take in exchange for work. Address us at our nearest office.

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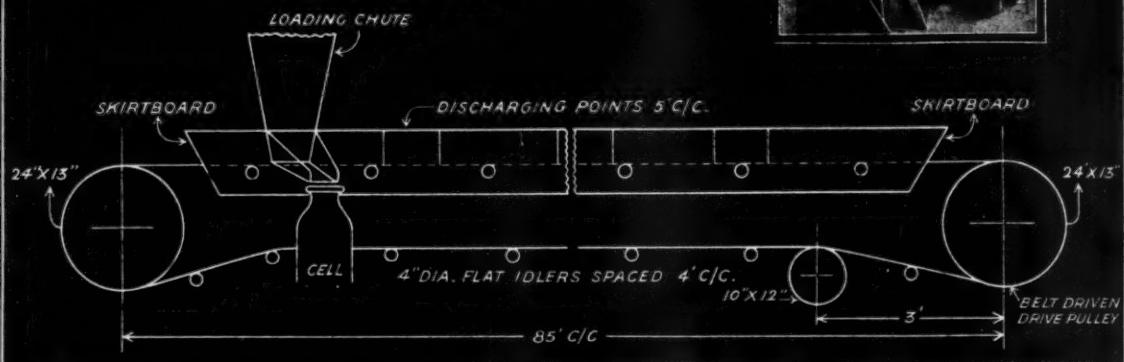
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**SPECIFIED:  
SPECIAL GOODYEAR CONVEYOR BELT**

180' 12" 5 PLY -  $\frac{1}{16}$ " COVER  
MATERIAL - COSETTES (SLICED SUGAR BEETS)  
SPEED 251 FT. PER MINUTE  
AMOUNT OF MATERIAL CARRIED TO DATE: 98,537 TONS

INDEPENDENT SUGAR COMPANY  
MARINE CITY, MICH.



Blueprint sketch and insert photograph of G. T. M. specified Goodyear Conveyor Belt in service in the plant of The Independent Sugar Company, Marine City, Michigan

Copyright 1922, by The Goodyear Tire & Rubber Co., Inc.

## The Sugar-Beet Acids—and the G. T. M.

*"This is the belt we were looking for from the day we opened the plant," said the Superintendent of the Independent Sugar Company, Marine City, Michigan. He was referring to the Goodyear Conveyor Belt specified by the G. T. M.—Goodyear Technical Man—after an expert analysis of the Company's service requirements.*

*"It satisfies us thoroughly,"* is the final verdict. "It has served through two successful campaigns since October, 1920, in splendid condition today, and, judging from its appearance, should last five more campaigns. It has withstood the destructive action of beet juices, has been easy to keep clean, and shows little sign of wear. We wish that every sugar man could know how our belt troubles have been so completely solved."

**The acids in beet juices** make short work of ordinary conveyor belts. The Independent Sugar Company spared no money trying to find belting that would resist these acids and withstand the heavy edge wear developed in this type of conveying. The belting problem was costing them time and money, not only in frequent replacements, but also in frequent interruptions in the work of the entire plant.

**When the G. T. M.** stepped into the office of

the company, late in the summer of 1920, he found a chair and a welcome waiting for him. They had heard of the G.T.M. The G.T.M.'s business was to hear about belt troubles.

**Together, they went over every point** in the problem. They fitted together the practical knowledge of the Company's officials with their own conditions of service, and the G. T. M.'s expert knowledge of belting. The result was the G. T. M.'s recommendation of a special Goodyear Conveyor Belt, 180 feet long, 12 inches wide, 5-ply in thickness, with 1-16 inch cover.

**How it has served** efficiently and economically has been told in the plant superintendent's own words. In its first 100-day campaign, it carried 50,647 tons of sliced beets; in the second, 47,890 tons. It is exposed to year-round weather conditions in a variable climate, and in winter carries tons of frozen beets. It has resisted edge wear.

**You can rely on the G. T. M.'s** analysis and his recommendation of powerful, trouble-free and long-wearing Goodyear Belts. To get in touch with the G. T. M., or for further information about Goodyear Belts, Hose, Packing, and other mechanical goods, write to Goodyear, Akron, Ohio, or Los Angeles, California.

**GOOD**  **YEAR**

August 3, 1922.

## MANUFACTURERS RECORD.

115

**The Thrilling Story of Petroleum.**

A tale of intense industrial interest is told in "Mexican Petroleum," a handsomely prepared book of 300 pages copiously illustrated, and published by the Pan American Petroleum & Transport Company of New York. Edward L. Doheny is president of the company, and of the Mexican Petroleum Company, Limited, and other subsidiaries, numbering seven.

The foreword says the primary purpose of the volume is to supply information in reference to the development of these companies and of their activities in both hemispheres and while this intent is completely fulfilled, there is much more than mere company interest to be found in the book. For instance the brilliant account of the "coming in" in 1916 of Cerro Azul, (Blue Hill), number four, the greatest gushing oil well that the world has ever known, is of some general concern for its vivid presentation of circumstances from the moment the vast volumes of gas and oil rushed from their subterranean prisons until several days later when the well was gotten under control, meanwhile having reached an enormous output of over 260,000 barrels of oil within 24 hours.

Besides accounts of many seepages and other natural flows of oil at various points in Mexico and also of the kinds of petroleum found therein, there are stories of oil discoveries and developments in other parts of the world, in addition to complete narratives showing the magnitude of the oil business and the dependence of the earth's population today upon a product the value of which was almost unknown little more than half a century ago.

In the United States the Drake well on Oil Creek in Pennsylvania was the first to be drilled on this continent. It produced 20 barrels of oil daily so that in 1859 an output of 7300 barrels a year was about the annual rate of petroleum output in this country. Now the oil producers of the United States turn out about 470,000,000 barrels of oil a year. The story of this great development in all its phases is narrated in the book.

**West Virginia Legislative Manual.**

"The West Virginia Legislative Handbook and Manual and Official Register" for 1922 is a large and complete volume of 1077 pages compiled and edited by John T. Harris, clerk of the State Senate. In this edition features of previous issues have been revised and many new features have been added. Photographs of Gov. E. F. Morgan and other State officers, including all members of the present Legislature, are given, each with a biographical sketch, and there are also pictures and sketches of the United States Senators from West Virginia and the state's members of the National House of Representatives. Besides, there are lists of members of all the previous legislatures of the state, the constitutions of the United States and of West Virginia respectively, the Declaration of Independence, and Lincoln's Gettysburg address. The book also contains a complete directory of all of the state's departments, boards, commissions, state institutions, charitable organizations, lists of county officers and boards, attorneys, political committees, newspapers, banks, district officers and post-offices throughout the whole state and there is also a like directory of a large number of the towns and cities, census facts, election data, rules of the Legislature, legislative enactments in 1921, a history of the vast good roads work undertaken by the state etc. The book is substantially bound in a neat blue cover with lettering in white.

**Chinese Plan 1000 Acre Truck Farm.**

Memphis, Tenn., July 28—[Special.]—A tract of 1000 acres of land in Obion County, in West Tennessee, has been secured by a Chinese gardening colony for the purpose of raising vegetables and fruits. It is understood that fifty Chinese families will take charge on January 1 next and establish a Chinese village designated as Canton. The plans call for the erection of a canning factory.

The tract of land as a whole is regarded as one of the richest in this part of the country, and as Obion County possesses adequate transportation facilities, the surplus produce will be marketed probably in Chicago or in other cities.

**PROPOSALS****BOND ISSUES****BUILDINGS****PAVING****GOOD ROADS**

**PROPOSALS FOR CORRUGATED ROOFING, WROUGHT IRON OR STEEL PIPE, Range Boilers, Water Buckets, Wire Netting, Cable Clips, Turnbuckles, Machine Bolts, Brass Tubing; Paint, Varnish and Floor Brushes; Street Brooms, Artificial Leather, Leather Belting, Packing, Inner Tubes, Car Seat Webbing, Emery Cloth, Paint, Calcium Carbide, Carbon Bisulphide, Stearic Acid Candles, Water Closet Seats, Barber Pole, Scythe Stones, Polishing Wheels, Rotators, Cotton Line, Twine, Writing Paper, Paper Drinking Cups; Ash and Yellow Pine Lumber.** Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10:30 o'clock a. m., August 16, 1922, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and information relating to this Circular (1489) may be obtained from this office or the offices of the assistant purchasing agents, 24 State Street, New York City, 611 Gravier Street, New Orleans, La.; and Fort Mason, San Francisco, Calif.; also from the United States Engineer Offices in the principal cities throughout the United States.—A. L. Flint, General Purchasing Officer.

**RATE:** 35 cents per line per insertion.  
**PUBLICATION DAY:** Thursday.

**FORMS CLOSE** 4 P. M. Monday.

**DAY LETTER:** When too late to send copy by mail to reach us by 4 P. M. Monday, forward by day letter.

**THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:**

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—35 cents per line per insertion.

Bids close August 14, 1922.

**PROPOSALS FOR LEVEE WORK.**—Office, Mississippi River Commission, 1st and 2nd Districts, Customhouse, Memphis, Tenn. Sealed proposals will be received here until 11 a. m., August 14, 1922, and then opened, for constructing about 29,400 cubic yards of earthwork in the Upper and Lower St. Francis and White River Levee Districts. Further information on application.

**TREASURY DEPARTMENT,** Supervising Architect's Office, Washington, D. C., July 26, 1922.—**SEALED PROPOSALS** will be opened in this office at 3 p. m., August 25, 1922, for the extension to workroom of the United States Post Office at Fort Worth, Tex. Drawings and specifications may be obtained from the Custodian of site at Fort Worth, Tex., or at this office in the discretion of the Acting Supervising Architect, Jas. A. Wetmore, Acting Supervising Architect.

Bids close August 7, 1922.

**\$20,000 Water and Light Bonds**

Sealed proposals will be received until August 7, 1922, for \$20,000 Water and Light Improvement Bonds for the city of Buena Vista, Ga., being 20 bonds of \$500 each, maturing one bond per year for the first 20 years, and 10 bonds for \$1000 each, maturing one bond per year for the last 10 years, all bonds to mature in 30 years and to bear five per cent interest payable semi-annually.

These bonds have been properly validated by order of court. The right to reject any and all bids reserved.

For further information write,

J. R. STOKES, Recorder,  
T. B. RAINES, Mayor,  
Buena Vista, Ga.

## PROPOSALS

August 3, 1922.  
Manufacturers Record.

Bids close August 14, 1922.

## \$750,000 6% Bonds

**Dothan, Ala.**  
 The City of Dothan will receive sealed bids at the Council Chamber in the City of Dothan for the sale of bonds issued by the City of Dothan, on the first day of April, 1921, in the aggregate sum of seven hundred and fifty thousand (\$750,000) dollars, in denominations of one thousand (\$1000) dollars, each, to bear interest at the rate of six per centum per annum, payable semi-annually on the first day of October and April of each year, and to become due and payable 20 years from the date of their issuance, to raise money and provide means for the purpose of providing and constructing a water works plant to pump, provide and deliver water in and to the City of Dothan, for the uses of said city and the inhabitants thereof, and to generate and transmit electricity for such purposes at or near what is known as Chalkers Bluff, on the Choctawhatchee River, in Geneva County, Alabama and transmission lines therefrom into the said City of Dothan, Ala., to be known as "Water Works Plant Bond Issue," until 8:00 o'clock P. M., August 14, 1922.

Each bid shall be accompanied by a certified or New York Exchange check in the sum of 5% of the total sum of seven hundred and fifty thousand (\$750,000) dollars, as a guarantee that the purchaser will carry out his contract for the purchase of said bonds above described.

The right is reserved to reject any and all bids.

R. W. LISENBY, Clerk.

Bids close August 22, 1922.

## \$200,000 5% Gold Bonds

CLARKE COUNTY, GEORGIA

Athens, Ga.

Sealed bids are invited for the purchase of \$150,000 Permanent Road and Bridge Bonds, and \$50,000 Bonds for Educational Purposes in whole or in part, at the office of Commissioners of Roads and Revenues of Clarke County, Georgia, at 12 o'clock noon, August 22, 1922.

Financial statement and full information furnished on request.

TATE WRIGHT,  
Clerk and County Attorney.

## \$40,000 6% Bonds

**Morehead City, N. C.**  
**FOR SALE — Forty Thousand Dollars (\$40,000), 30-year, 6% bonds; Town of Morehead City, interest payable semi-annually authorized by special account of Legislature with authority to make public or private sale. For information write E. H. Gorham.**

Bids close August 24, 1922.

## \$40,000 5% Municipal Water and Light Bonds

\$500 DENOMINATION

Quincy, Fla.

The City of Quincy, Fla., offers its 5% interest bearing bonds to the amount of \$40,000 serial bonds, \$2000 of same being payable and redeemable annually in sequence of their numbers beginning with number 117, July 1st, A. D. 1952 Interest payable semi-annually January and July first of each year after 1922. Sealed bids for the entire amount of City Electric Light and Water bonds will be received at the office of J. P. Smith, City Clerk, up to August 24, 1922, at 3 o'clock P. M.

A certified check or cashier's check for 5% of the amount of bid is required with each bid, and the right to reject any and all bids is reserved by the City.

(Signed) W. E. SHELFER,  
President of the City Council  
of the City of Quincy, Fla.  
(Signed) J. P. SMITH,  
City Clerk.

Bids close August 14, 1922.

## \$400,000 5½% Bonds

Clintwood, Va.

Sealed bids for the purchase of \$400,000 in Dickenson County Bonds, bearing interest at 5½%, payable semi-annually, bonds to run 10 years, with the privilege of the County to redeem bonds at any time after five years. Bids will be received up until 12 M. August 14, 1922. The County reserves the right to reject all bids if it thinks proper, and in that event said bonds may be sold at above date, at the Court House of Dickenson County, Virginia, at Public Auction to the highest bidder.

W. E. RASNICK, Clerk.

Bids close August 15, 1922.

## \$50,000 6% Road and Bridge Bonds

## NOTICE OF SALE OF BONDS

Fort Pierce, Fla.

Sealed bids will be received up to two o'clock p. m., August 15, 1922, for purchase of \$50,000 Six Per Cent Coupon Bonds of Special Road and Bridge District No. 2, St. Lucie County, Florida. Bonds maturing one bond on July 1 of each of the years 1923, 1924, 1925 and 1926; two bonds on July 1 of each of the years 1927, 1928 and 1929; three bonds on July 1 of each of the years 1930 to 1941, inclusive, and four bonds on July 1 of the year 1942.

Write to P. C. Eldred, Clerk, Fort Pierce, Florida, for full information.

Bids close August 7, 1922.

## \$160,000 School Bonds

Lancaster, S. C.

The Board of Trustees of Lancaster School District, South Carolina, will receive up to 12 o'clock M., on August 7, 1922, at The Bank of Lancaster, Lancaster, S. C. sealed bids on \$160,000 Lancaster School District Bonds, in two issues, as follows:

\$85,000 in Bonds of \$1000.00, payable 25 years from date thereof, bearing five per cent interest, coupons payable semi-annually January 1st and July 1st, at Hanover National Bank, New York. Trustees authorized to purchase and retire bonds at par from annual Sinking Fund provided, or to deposit Sinking Fund in Bank if unable to purchase bonds at par. Validated by Legislative Act. Bonds dated July 1st, 1921, and cannot be sold under par.

\$75,000 in Bonds of \$1000.00, payable 20 years from date thereof, bearing not exceeding six per cent interest coupons, payable semi-annually, January 1st and July 1st, at Hanover National Bank, New York. Trustees authorized to purchase and retire bonds with any available Sinking Fund after five years. Bonds dated July 1st, 1921. Validated by Legislative Act. Bids on this issue will be received on basis of five per cent, five and one-half per cent and six per cent.

Bonds of both issues are payable at Hanover National Bank, New York.

Bids will be received on the two issues separately and as a whole, and sold separately or as a whole, at the option of Trustees. Certified or Cashier's Check for two per cent of the par value of bonds required with bid as guarantee of good faith, and as forfeit in the event the depositor is the successful bidder and does not comply with the terms and conditions of his bid. The Board reserves the right to reject any and all bids.

LEROY SPRINGS,  
Chairman School Board.  
GEO. W. WILLIAMS,  
Secretary School Board.

Bids close August 15, 1922.

## Miami River Bridge

AT

SOUTHWEST SECOND AVENUE  
FOR THE  
CITY OF MIAMI, FLORIDA

## NOTICE TO CONTRACTORS

Sealed proposals, to be filed with the City Manager, will be received by the City of Miami, Florida, up to nine o'clock A. M., August 21, 1922, at the regular meeting of the Commission, for the construction of a bridge over the Miami River at Southwest Second Ave. The bridge is a double leaf arched bascule span with concrete piers and embankment approaches; clear span 115 ft., total length of improvement about 500 ft.; one 30 ft. roadway, two 8 ft. walks. Approximate structural metal and machinery 170 tons; concrete 2700 cubic yards, reinforcing steel 26 tons.

The work will be let to one contractor on a unit price contract. With each bid there shall be a certified check or bidder's bond for not less than five per cent of the gross bid, made payable to the City of Miami, to be forfeited as liquidated damages by any bidder who is awarded the contract, who fails to promptly execute the contract and bond. Checks of unsuccessful bidders will be returned upon execution of contract, or sooner, upon action of the Commission, or the City of Miami. The contract will be awarded to the lowest responsible bidder, but the City Manager shall have the power to reject all bids and advertise again.

Plans and specifications may be examined in the office of Chas. W. Murray, Director of Public Service and Welfare, Miami, Florida, and in the office of Harrington, Howard and Ash, Consulting Engineers, Kansas City, Missouri. Copies may be secured from the Consulting Engineers by depositing \$25.00. Such copies shall be returned and a refund of \$15.00 made.

F. H. WHARTON, City Mgr.

Bids close August 15, 1922.

## Road and Bridge Construction

Charleston, W. Va.

Sealed proposals will be received by the State Road Commission of West Virginia at its office in Charleston, West Virginia until 10 o'clock A. M. on the 15th day of August, 1922, and at that time and place publicly opened and read for the construction of the following bridges and section of state road.

## ROAD

Project 3126—Brooks county—0.2 mile grading and paving with Water Bound Macadam. Certified check for \$700.

## BRIDGES

Witcher Bridge No. 772, Project 116, Kanawha county, over Witcher's Creek, 65 ft. steel span superstructure. Certified check for \$500.

Cedar Grove Bridge No. 773, Project 3179, Kanawha county, over Kelly's Creek, 80 ft. steel span superstructure, concrete substructure. Separate proposals will be received for superstructure, certified check for \$500 and substructure certified check for \$500.

Hughesonton Bridge No. 783, Project 3135-B, Kanawha county, over Hughes Creek, 80 ft. steel span superstructure only, certified check for \$500.

Hardland Bridge No. 805, Clay County, over Elk River. Concrete substructure only. Certified check for \$1100.

Bartow Bridge No. 829, Project 3185, Pocahontas county, over East Fork of Greenbrier River. Concrete arch, 258 ft. spans. Certified check for \$500.

Poca Bridge No. 619, Putnam county, over Pocatalico River, 180 ft. span, steel truss superstructure, Ashlar masonry substructure. Separate proposals will be received for substructure, certified check for \$1400 and superstructure, certified check for \$600.

East Keystone Bridge No. 727, Project 3096, McDowell county, over Elkhorn Creek, 65 ft. span steel with 5 ft. sidewalk, Ashlar masonry substructure. Substructure and superstructure to be let in one contract. Certified check for \$500.

Clothier Bridge No. 810, Project 3059, Logan county, over Spruce Fork, 130 ft. steel span superstructure, Ashlar masonry substructure. Substructure to be let on separate contract. Certified check for \$500.

Sharpless Bridge No. 826, Project 3059, Logan county, over Spruce Fork, 130 ft. steel span superstructure, Ashlar masonry substructure. Substructure to be let on separate contract. Certified check for \$500.

Note: Superstructures for Bridges No. 810 and No. 826 to be let in one contract. Certified check \$800.

Seng Camp Bridge No. 830, Project 3059, Logan county, over Seng Camp Creek, concrete through girder, 45 ft. span, Ashlar Masonry substructure. Certified check for \$500.

Allen Creek Bridge No. 730, Project 3062, Wyoming county, over Guyandotte River. Concrete arch, 2-75 ft. spans. Certified check for \$1000.

Cross Creek Bridge No. 819, Project 3126, Brooks county, over Cross Creek, concrete arch, 90-ft. span, Certified check for \$1200.

Granny Creek Bridge No. 807, Project 3110, Braxton county, over Granny creek. Concrete deck girder, 50 ft. span, concrete substructure, pile foundation. Certified check for \$750.

Junction Bridge No. 802, Project 3011-B, Hampshire County, over Mill Crk. Concrete slab, 6-20 ft. spans, concrete substructure. Certified check for \$500.

Reynolds' Gap Bridge No. 808, Project 3013 Hardy county, over Mud Lick Run. Concrete thru girder, 2-40 ft. spans, concrete substructure. Certified check for \$500.

Judy Bridge No. 809, Project 3014, Pendleton county, over N. Mill Creek. Concrete through girder, 2-40 ft. spans, concrete substructure. Certified check for \$500.

Reeds Creek Bridge No. 828, Project 3105, Pendleton county, over Reeds Creek. Concrete slab, 2-22 ft. spans, concrete substructure. Certified check for \$500.

Proposals will be received only upon State Standard Forms in accordance with plans, specifications and estimates of quantities therefor, which standard forms, plans, specifications and estimates may be obtained from the Office of the State Road Commission at Charleston, West Virginia.

Each proposal must be accompanied by a certified check in the amount noted for each proposal.

The right is reserved to reject any and all proposals.

State Road Commission  
E. B. CARSKADON, Sec'y.

Bids close August 21, 1922.

U. S. Engineer Office, Baltimore, Md.—Sealed proposals will be received here until 1 P. M., daylight saving time, August 21, 1922, and then opened for dredging in Baltimore Harbor and Channels. Further information on application.

Bids close August 28, 1922.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., July 27, 1922.—SEALED PROPOSALS will be opened in this office at 3 p. m., August 28, 1922, for remodeling in the United States Post Office, Raleigh, N. C. Drawing and specifications may be obtained from the Custodian of the building or at this office, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

Bids close August 1, 1922.

### Concrete and Gravel Roads

STATE OF MARYLAND  
STATE ROADS COMMISSION  
NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building eight sections of State Highway, as follows: Frederick County, Cont. F-32. One section of State Highway along the Buckeystown Pike from end of Cont. F-31 Ext'd. to Furnace Branch Bridge, a distance of 1.35 miles. (Concrete.) Howard County, Cont. H-23. One section of State Highway from the end of Cont. 433 at Benson Branch to the Triadelphia Pike, a distance of 1.5 miles. (Concrete.) Harford County, Cont. H-29. One section of State Highway from Whiteford toward Dublin, a distance of 1.0 miles. (Concrete.)

Charles County, Cont. Ch-23. One section of State Highway from Mason Springs to Marbury, a distance of 2.6 miles. (Gravel.)

Cecil County, Cont. Ce-41. One section of State Highway from Calvert toward Fair Hill, for a distance of 2.0 miles. (Concrete.)

Queen Anne's County, Cont. Q-22. One section of State Highway from Sudlersville toward Millington, for a distance of 2.0 miles. (Concrete.)

Dorchester County, Cont. D-25. One section of State Highway from Eldorado toward Federalsburg, for a distance of 1.0 miles. (Concrete.)

Wicomico County, Cont. W-21. One section of State Highway from Salisbury toward Snow Hill, for a distance of 2.0 miles. (Concrete.)

will be received by the State Roads Commission, at its offices, 601 Garrett Building, Baltimore, Md., until 12 M., Standard Time, on the 1st day of August, 1922, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 13th day of July, 1922.

L. H. STEUART, J. N. MACKALL,  
Secretary. Chairman.

Bids close August 15, 1922.

### Street Paving

Gainesville, Florida.

Bids will be received by the City Council of the City of Gainesville, Florida, until eight P. M., August 15, 1922, for paving certain streets in the City of Gainesville.

The proposed work includes approximately 85,000 square yards of paving with brick, concrete, sheet asphalt, bituminous macadam, or other material.

Specifications may be obtained from G. H. Cairns, City Manager. Certified check for Five Per Cent of amount of bid to accompany bid. The right is reserved to reject any or all bids. G. H. Cairns, City Manager.

Bids close August 10, 1922.

### Road Improvement

SUMTER COUNTY PERMANENT ROAD COMMISSION

Sumter, S. C.

Notice is hereby given that sealed proposals will be received by the Sumter County Permanent Road Commission at the City Council Chamber in Sumter, S. C. until 10:00 o'clock A. M., August 10th, 1922, for the grading of drainage structures and several types of Hard Surface Pavement on the following roads:

Sumter-Manning Road..... 6.1 miles  
Shiloh Road..... 7.6 miles  
Camden Road Sec. "C"..... 4.2 miles

Bid on each road must be accompanied by bidders bond or certified check for \$2000. If the work is bid on as a whole, a check for \$4000 must be submitted.

Plans for the work may be seen at the Office of the Engineers, Lee, Pennell & Murray, Sumter, S. C. Specification and proposal forms may be obtained from the Engineers upon request accompanied by a check for \$5.00 which sum will be refunded if same are returned within thirty days after receipt of bids.

The right is reserved to reject any or all bids and to waive all technicalities.

Sumter County Permanent Road Coms.,  
Sumter, S. C.

Lee, Pennell & Murray, Engineers,  
Sumter, S. C.

Bids close August 24, 1922.

### Water and Power Improvements

Quincy, Fla.

Sealed proposals will be received by the City of Quincy, Fla., at the Clerk's office until 3 P. M., August 24, 1922, for the furnishing of all equipment, machinery, labor and material for improvements to the Water and Power Plant of the City of Quincy, Fla., including foundations, piping, the following list of machinery all furnished delivered, erected, ready for operation.

The equipment to be as follows:

One uniflow engine direct connected to one 210 K. V. A. 225 R. P. M. two phase, 2200 volt alternator, and as an alternate unit direct connected to a 312 K. V. A. 200 R. P. M. alternator, 120 pound steam pressure.

One three-panel switchboard.

One 1000 gallon centrifugal pump and motor and one 500 gallon centrifugal pump and motor, both 190 foot head.

One 500 H. P. feed water pump and heater.

One motor driven air compressor, 600 cubic feet.

One surface condenser.

One 200 H. P. boiler, 125 pound pressure.

Specifications will be furnished on request.

Each bid must be accompanied by a certified check on a bank satisfactory to the City Council for bidder's bond for 5% of the amount of the bid.

A bond in the sum of 25% of the amount of the contract will be required for the faithful performance of the work.

Copies of plans and specifications may be seen at the office of the City Clerk or at the office of the Engineers, Atlanta, Ga. Copies may be obtained from the Engineers on deposit of \$5.00 which will be refunded to bona-fide bidders on return of plans and specifications.

The City reserves the right to reject any and all bids.

J. B. McCRARY ENGINEERING CORP.,  
Engineers.

CITY OF QUINCY, FLA.  
W. E. SHUFELD, Pres't. Council.  
J. P. SMITH, Clerk Council.

Bids close August 17, 1922.

### Electric Light Plant Extensions

Easton, Md.

Notice is hereby given that sealed proposals will be received by The Easton Utilities Commission of Easton, Md., until 2 o'clock P. M., on the 17th day of August, 1922, at the office of said Commission at Easton, Md., for the furnishing of the materials and equipment and for the erection of additions to the present electric light plant, including Turbine-Generator, Exciter Set, Switch Board, Condenser, Spray Nozzles, Cooling-Pond, Cooling Tower, Excavation, Concrete Work and Electric Construction.

Specifications, plans, information for bidders, forms of proposals, contracts and forms of bonds required and other information can be obtained from the secretary of The Easton Utilities Commission, Easton,

Md., or from Carl J. Kiefer, Consulting Engineer, 810 Fourth National Bank Building, Cincinnati, O., upon the deposit of \$5.00, which will be refunded upon the return of the specifications, plans, etc.

Also sealed proposals will be received for supplying Diesel or Semi-Diesel generating equipment, to operate in parallel with the existing steam engine driven generators, provided such proposals be accompanied by the stipulated forfeit, and provided further that such proposals be accompanied with complete specifications. Plans and all necessary drawings for the installation of the now proposed equipment, together with plans for the installation of future additional equipment.

The Eastern Utilities Commission reserves the right to reject any or all bids.  
THE EASTON UTILITIES COMMISSION,  
By John S. McDaniels, Secy.

### Spavinaw Water Project

#### PRELIMINARY NOTICE TO CONTRACTORS

Tulsa, Okla.

The Water Commission of the City of Tulsa, Okla., contemplates receiving proposals during the last half of September, for the construction of the Spavinaw Water Supply Project, for which \$6,800,000 bonds have been voted.

The work contemplated consists of a masonry and earth dam 50 feet high, 28 miles of 60-inch and 25 miles of 54-inch pipe, a 78-inch tunnel 7000 feet long, a 350,000,000 gallon storage reservoir, a 10,000,000 gallon high pressure reservoir, and approximately 7 miles of cast iron or steel force mains.

Plans and specifications will not be entirely completed before August 15, but are now far enough advanced for contractors who contemplate bidding to look over the work. The engineers for the project are prepared to show intending bidders the location of the various works upon the ground and to give detailed information. Contractors contemplating inspecting the work should notify the engineers as far in advance as possible.

Formal notice to contractors will appear in this publication upon the completion of the plans.

TRAMMELL & HOLWAY, Engrs.,  
329 Kennedy Building,  
Tulsa, Okla.

DARNEY H. MAURY, Cons'l. Engr.,  
Chicago, Ill.

The Water Commission  
of the City of Tulsa.  
By A. J. RUDD, Chairman.

Bids close August 15, 1922.

### Inlet

Fort Lauderdale, Fla.

Notice is hereby given that the Board of County Commissioners, Broward County, Florida, will receive bids until 11:00 A. M. on Tuesday, August 15, 1922, for the construction of an inlet from New River Sound to the Atlantic Ocean, near Ft. Lauderdale, as per plans and specifications on file in the Clerk's Office, Courthouse Bldg., Ft. Lauderdale, Fla.

Such work shall be let in two contracts, being as follows:

a) The dredging of 81,000 cubic yards more or less of earth; and the dredging of 5000 cubic yards more or less of rock;

b) The furnishing and placing of 6200 cubic yards more or less of riprap and jetty hearting and of 2500 tons more or less of jetty capping, all in riprap and jetty construction.

Separate bids will be received and separate contracts let for each of the two classes of work mentioned. Copy of plans and specifications may be secured from the Clerk upon payment of \$1.00 to cover cost of printing the same.

Each bid shall be accompanied by a certified check in the amount of 3% of the bid, guaranteeing that the bidder will make contract and bond within ten days of notice of award.

Bond on each contract will be required in the sum of 50% of the amount bid.

Address all bids to the Board of County Commissioners, in care of Frank A. Bryan, Clerk, Ft. Lauderdale, Fla.

The Board reserves the right to reject any and all bids.

By order of the Board.  
H. G. WHEELER, Chairman.

Attest:  
FRANK A. BRYAN, Clerk,  
GEO. B. HILLS COMPANY, Engineers,  
Jacksonville, Florida.  
Dated July 10, 1922.

# CLASSIFIED OPPORTUNITIES

## MINERAL AND TIMBER LANDS WATER POWERS, MISCELLANEOUS PROPERTIES,

**FOR SALE**—6642 acres of land in south west Texas at \$2.25 per acre for fee, all cash. This is an improved ranch and mineral land located about 12 miles from famous Shafter Silver Mine. An excellent safe investment with wonderful possibilities. D. C. EARNEST, Dallas, Tex.

**BRICK AND TILE CLAY**  
Brick and Tile Clay for sale—61 acres; two miles largest clay North Carolina; N. & W. Ry., concrete road. This location will save \$3.00 thousand transfer cost; wonderful opportunity. Geo. D. Hodgin, Winston-Salem, N. C.

**FLINT FIRE CLAY**  
FOR SALE—180 A. of Sciotoville Flint Fire Clay, located directly on the B. & O. Ry., between Scioto Furnace and So. Webster, O., in the production field. Good location for plant. American labor and near the Jackson coal field. Land covered with good, second growth timber. J. A. Stout, Beaver, O.

**FULLERS EARTH**  
I have 200 acres land underlaid with good grade Fullers Earth. Overburden from 5 to 14 feet. Fullers Earth 26 to 30 feet depth,  $\frac{1}{2}$  mile to T. & I. R. R., for sale. B. S. Quartermann, Morriston, Fla., R. F. D. 1, Box 54A.

**IRON ORE**  
FOR SALE—Several hundred million tons of very rich red and brown iron ores. Close to river and rail. C. G. Samuel, Athens, Tenn.

**FOR SALE**—Going coal mines—coal, oil and gas lands—timber tracts. Reports made on same anywhere. E. H. Morris, Box 518, Charleston, W. Va.

**FOR SALE**—1173.72 acres coal in Buchanan Co., Va. Four seams. A rare opportunity to buy coal land in proven territory. For description write Box 262, Graham, Va.

**FOR SALE**  
Operating Elkhorn Mine—Located on S. & E. R. R., Pike County, Ky. Leasehold—well equipped. For particulars address B. N. Ford, Box 871, Cincinnati, Ohio.

**COAL LANDS AND MINES**  
For Sale or Lease—2000-acre West Virginia coal land.  
O. D. Hill,  
Kendallia, W. Va.

**FOR SALE**—Seventeen hundred acres fee coal land on the main line of the Norfolk and Western Railway Company. Non-union field. Four workable seams (steam, domestic and bi-product coals). Valuable timber on property. Railroad sidings granted. If interested write Drawer G. Williamson, West Virginia.

**TIMBER**  
**FOR SALE**—A very attractive timber proposition of 25 million feet of virgin long and short leaf pine and  $3\frac{1}{2}$  million feet of hardwood, located in Macon County, Ala., 6 miles from railroad. Shipping point on W. of A. Seaboard, and C. of Ga. railroads. Price \$3.00 per thousand stumpage. For further information apply to Box 242, Bessemer, Ala.

**FOR SALE**—40,000,000 feet virgin hardwood timber, 4500 acres in Swain County, N. C., within  $1\frac{1}{2}$  miles railroad. Finest quality big soft yellow poplar, mountain oaks, basswood, ash, cherry, maple, chestnut and hemlock. In two rich coves, all down grade to mill site. Native labor plentiful. Unexcelled as an investment. Savage Bros., Murphy, N. C.

## RATES AND CONDITIONS

Rate 30 cents per line per insertion. Minimum space accepted, four lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, oil or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 28c. per line; 300 lines, 26c. per line; 500 lines or more, 25c. per line.

**TIMBER**  
We have more than 800 Million Feet Cypress and 200 Million Feet Long Leaf Yellow Pine Timber; intersected by railway. Particulars to interested parties. Nelson Realty Company, Kissimmee, Fla.

**TIMBER LAND  
RED GUM**

The best RED GUM timberland proposition in the South. Unequalled water transportation to Mississippi River and Gulf. The Molar Land Co., Alexandria, La.

**FARM AND TIMBER LAND**

FOR SALE—5000 acres land with timber, something like 10,000,000 ft., about 3 miles of a thriving seaport town. Highway through it. Can be bought for little over half the surrounding lands are bringing. Address Box 264, Raleigh, N. C.

## FARM FRUIT, AND TRUCK LAND

**ALABAMA**  
COME SOUTH  
OUT-DOOR ALL YEAR ROUND  
CATTLE AND POULTRY

DAIRY FARM at a sacrifice. 150 acres near city limits, all cleared. One of the finest residences in Alabama, all modern conveniences, running water, electric light and gas plants on premises. Concrete silo, 250 tons capacity. Supt.'s house containing 8 rooms. Cattle barns with cement floors for 90 head of cattle ready for immediate operation. Owing to change of occupation and conditions owner is willing to sell one-third cash and balance yearly for one to ten years to a quick buyer. Property can be bought for less than half its actual cost. Anyone desiring to inspect this magnificent property will be called for and brought back and forth in auto by addressing Owner, P. O. Box 491, Mobile, Ala., during the next six days.

**ARKANSAS**  
FOR SALE—50,000-acre colonization tract in ARKANSAS. Good soil, railroad. No overflow. \$6 per acre. Bargain. Address No. 6053, care Manufacturers Record, Baltimore, Md.

The rice growing section of Arkansas is coming into its own again. I wish to hear from investors with vision enough to buy before the advance in prices certain to occur. Reference: Peoples National Bank. Geo. C. Lewis, Stuttgart, Ark.

**FOR SALE OR EXCHANGE**—300 acres near railroad stations, 13 miles south of Plant City, of which 100 acres is low hammock, balance pine land. Price \$20,000, terms or will exchange for western farm or income property, incumbered property not considered. H. B. Wordehoff, Plant City, Fla.

**FLORIDA**—10 acre farms at Geerworth. 10 feet of muck soil. Best opportunity in Florida today. Terms, W. M. Owen, West Palm Beach, Florida.

## FLORIDA

COME TO FLORIDA this summer, and enjoy a real vacation, where the breezes blow all the time. Summer resort excursion rates; inquire of your local railroad agent. We have a home, grove or farm for you. Send for booklet and 1922 summer list. Tampa-West Coast Realty Co., Opp. Post Office, "Since before the War", Tampa, Fla.

**INVESTMENT BARGAIN**—200-acre highly improved farm ranch, equipped with modern buildings, machinery, stock, hogs, etc.; close to market, on railroad; lath mill, and turpentine still. A money maker, sacrifice for \$125,000. G. E. Gage, 21 Blum Building, Jacksonville, Fla.

## NEBRASKA

Improved farms and ranches at pre-war prices. Location, climate and water excellent. Tax Free Real Estate loans at attractive rates. Write for descriptive list and prices. Boyles & Dillman, Investment Bankers, McCook, Nebr.

## NORTH CAROLINA

FOR SALE—140-acre farm, facing hard surfaced state highway 8 miles of Wilmington, N. C., half cleared suitable for trucking fruit and stock raising. Good local market for vegetables and dairy products. Near ocean and can secure sound frontage. A bargain at \$40 per acre. A. M. Blake, owner, P. O. Box 1164, Wilmington, N. C.

## SOUTH CAROLINA

Truck farms that pay dividends annually can be bought at reasonable prices here. Vegetables are shipped eight months in the year. Three and four crops are grown on the same land annually. Excellent climate and health. Plenty of labor; strikes unknown. Well organized association that sells all farm products. For particulars write Lake Realty Company, Beaufort, S.C.

## TEXAS

RICH black land farms; well drained; oil, fruit; nature's sanitarium; Gulf Coast; rain belt; hard road; free booklet. Charles Harper, Port Lavaca, Tex.

## VIRGINIA

VIRGINIA MOUNTAIN ORCHARD—65 acres. 800 thrifty bearing apple trees. Productive soil, lies well. Attractive 6 room and bath bungalow with large front porch, situated to command a superb view of the surrounding country and mountains. Located near Natural Bridge Highway and 2 miles from R.R. station. Climate very healthful. Priced exceedingly at \$6750. We specialize in Virginia Farms.

Ogleby Real Estate Agency Inc.  
Lynchburg, Va.

## BUSINESS OPPORTUNITIES

I SPECIALIZE in industrial, warehouse and business sites at and adjacent to Washington, D. C.

M. B. HARLOW,  
Harlow Building, Colorado Building,  
Alexandria, Va.

If interested in the  
**BEST SECTION OF THE SOUTH**  
If you want a Cotton Mill,  
or Southern Mill Stocks  
or Investment in Central Real Estate  
or Large Suburban Development property  
or a Manufacturing Site  
Address

F. C. ABBOTT & COMPANY  
Trust Building, Charlotte, N. C.

Partner wanted with \$25,000.00 for establishing Hardware and Paint Store with splendid location in the heart of business district of Mexico City.

Business is in sound financial condition and has first-class customers.

Present owner on account of old age wants a young, energetic man, with experience of the same business. M. R., Box 408, Mexico City.

August 3, 1922.  
Manufacturers Record.

## CLASSIFIED OPPORTUNITIES

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### BUSINESS OPPORTUNITIES

#### FOR SALE

The ice plant, bottling works, grocery store and meat market, known as "Crowley's" belonging to the estate of Sarah A. Sullivan, on the northeast corner of Front and King Streets, Georgetown, S. C. All in operation now. Selling preparatory to winding up estate. For particulars write to: W. D. MORGAN, Executor  
Estate Sarah A. Sullivan

#### MIAMI, FLORIDA

##### THE MAGIC City

Apartment House For Sale—New reinforced concrete building, 24 apartments of 2 and 3 rooms each with private bath, all nicely furnished. Owner is sacrificing below cost, as he is called away from the City. Price and terms on application. Write J. L. Kelley Realty Co., 47 Real Estate Bldg., Miami, Fla.

**FOR SALE**—By owner, family hotel, 6 miles south of Palm Beach, the fastest growing town on East Coast. For particulars address New Jersey Hotel, Lake Worth, Fla.

#### ANNOUNCEMENT

We desire to notify you that we have associated ourselves together to render Efficient, Confidential Service to Bankers, Lawyers, Steam and Electric Railways, Merchants and Industrial Corporations under the name of—  
**COMMERCIAL RAILWAY & INDUSTRIAL COMPANY**

(C. R. & I. COMPANY)  
General Offices: 437-A Equitable Building, Baltimore, Md.

#### SILENT PHONE, PLAZA 1-9-8-5

Mr. H. KENT McCAY, former City and Harbor Engineer of Baltimore and recently of the Construction Corps of the U. S. Navy will have charge of the office and financial details of this company.

Mr. J. P. GRAHAM, former District Manager of the Railway Audit and Inspection Company (Baltimore Branch) will be in charge of the field work.

We are confident that this combination will give our clients most excellent results and we promise the utmost co-operation.

We solicit your business.

**COMMERCIAL RAILWAY & INDUSTRIAL COMPANY**

H. K. McCAY, President  
J. P. GRAHAM, Vice-President  
A SELECT CLIENTELE OUR AIM

Interest open in Marine Transportation and Commission Company. Business enough from South to earn \$300,000 Net Annually. 25% on capital invested. Alfred S. Perry, Perry Building, Fairfield, Conn.

### FINANCIAL

**WANTED**—\$40,000 to complete building of church; pay 6% interest, reasonable brokerage. Membership pledged \$5,000; 40% already collected. Old church building and new lot worth \$20,000. Membership 400; financial responsibility good for at least quarter million dollars. New church building will cost \$100,000. If interested write W. E. Robinson, Chairman, 133 East 12th St., Dallas, Tex.

**BONDS**—Have buyers for manufacturing, mercantile, industrial, Mining; entire issues. A. W. Johnson, 212 Mass Bldg., Kansas City, Mo.

### COLLECTIONS

**COLLECTIONS**  
MERRIAM,  
507 FIFTH AVENUE,  
NEW YORK CITY

### PATENT ATTORNEYS

**INVENTORS**—Send sketch or model of your invention, for opinion concerning patentable nature, and exact cost of applying for patent. Book, "How to Obtain a Patent" sent free. Given information on patent procedure and tells what every inventor should know. Established 25 years. Chandlee & Chandlee, 412 7th St. N.W. Washington, D. C.

#### PATENT-SENSE.

"The Book for Inventors and Manufacturers."

#### FREE WRITE

LACEY & LACEY,

Dept. 15. Washington, D. C. Est. 1869.

### PATENT ATTORNEYS

**PATENTS, TRADE-MARKS AND COPY RIGHTS**—Write for our Free Illustrated Guide Book and EVIDENCE OF CONCEPTION BLANK. Send model or sketch and description of your invention for our opinion of its patentable nature free. Highest references. Prompt service. Reasonable terms. Victor J. Evans & Co., 712 9th St., Washington, D. C.

**PATENTS**—Booklet free. Highest references. Best results. Promptness assured. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

**JACK A. SCHLEY.**  
Patent and Trade-Mark Attorney,  
306 Interurban Building, Dallas, Tex.  
319 McGill Building, Washington, D. C.

### INDUSTRIES WANTED

We want a manufacturer or industry employing labor to locate at Jacksonville, Fla. We have 60 acres land on railroad and close to deep water on St. Johns River; brick streets, electric current, both power and lighting, water works system and street cars; three immense warehouses; housing facilities for 40 families.

Will make any reasonable concession to responsible parties. Will give long lease at nominal rental, sell at very low figure or might consider stock in satisfactory enterprise. P. O. Box 48, Jacksonville, Fla.

#### CEMENT PLANT

A location in South for cement plant. All raw materials, including best steam coal, on property free of freight charges. Can make attractive offer to principals. W. A. Patton, Engineer, Coalmont, Tenn.

### FACTORY SITES

#### MANUFACTURING SITE.

Port of Wilmington, N. C.  
Two miles south of City of Wilmington, county taxes with city conveniences. About 70 acres of improved land with a 1200 foot deep water frontage on the Cape Fear River. Ideal climatic conditions for outdoor work. Six miles of standard gauge railroad track with railroad connections. Complete fire protection system, power, air and water lines, concrete roadways. Steel truss buildings 260' x 160' and 260' x 80'. Concrete storehouse. Reinforced concrete power house. Details on request.

**MARYLAND WRECKING COMPANY.**  
Carolina Shipyard,  
Wilmington, North Carolina.

### BALTIMORE

### FACTORY

#### SITES

William Martien & Company,

1413 Lexington Bldg.,

Baltimore, Md.

**NEW ORLEANS.**  
Commercial and Factory Sites and Buildings  
Gurley & Parkinson,  
338 Carondelet St.

### INDUSTRIAL PLANTS

**FOR SALE**—Plant for manufacture of Automobile Tires and Tubes; 70% of machinery now set and in building which is constructed of brick, complete steam plant ready for operation; four-acre site; wonderful opportunity. Address J. A. Parker, Gulfport, Miss.

**FOR SALE**—Fully equipped up-to-date Bottling Plant. Double head Shields bottling machine and new Miller-hydro soaker and washer. Completely equipped with bottles, cases and motor trucks, etc. Located in Guyan Valley non-union coal fields at the mouth of Buffalo Creek, Man., W. Va. Just ready to start operating. Reasonable terms to right party. Great opportunity. Write George H. Williamson, Atty., Citizens National Bank Bldg., Charleston, W. Va.

### INDUSTRIAL PLANTS

**FOR SALE OR LEASE**—Manufacturing site; 25 acres, Elkridge Md.; on Patapsco River; about 180 H.P. developed; good buildings; partly equipped; main line B. & O. Address R. W. Kime, Salem, Va.

**FOR SALE**—Fruit and Vegetable Package mill in Florida. Rail and water service. Beautiful town. Now making six basket carriers. Soon start orange boxes. Will not take much money to handle. Address No. 6046, Manufacturers Record, Balt., Md.

**FOR SALE**—One Midget Marvel Flour Mill complete, capacity fifty barrels. This mill is new; cause of sale, no wheat raised here. Pat H. Wheat, Lonoke, Ark.

#### FOR SALE

Two Business Properties  
at Highlandtown, Baltimore

Improved for any manufacturing or development purpose, with power house and refrigeration at option of purchaser.

Situated as follows:

(1) Lot 120 feet front on Eastern Ave., through to Fleet St., and 120 ft. front on Fleet St., with four-story brick buildings ready for use.

(2) Lot 66 feet frontage on Third St., by 379 feet fronting on Bank St., improved by brick buildings.

Both properties immediately available, can be bought separate or as a whole.

Apply to The Wm. Schluderberg-T. J. Kurde Co., Baltimore and Fifth Sts., Baltimore, Md.

**CEMENT PLANT**  
Water Power Site for sale; one of the oldest feed mills in northern New Jersey, has been in the family since 1865; 50 miles from New York. State road, railroad and electric light and power line along property. 10 acres. Frank Dufford, Middle Valley N. J. Morris County.

One complete Quarry Plant, has contracts on hand, is making money, this plant is located in the South. Price, etc., on application. James Carroll, 917 Wainright Bldg., St. Louis, Mo.

### LUMBER AND BUILDING MATERIAL

#### Direct Mill Prices on

#### LUMBER

You can effect big savings on genuine long leaf Flooring, Ceiling, Siding, Sheathing. Moulding and cut-to-length Framing, by ordering direct from the producing field. Complete bills, guaranteed grades and workmanship. Submit schedule for delivered price. The Dimension Co., Lockhart, Ala.

### MEN WANTED

Salesmen for Southern States, who call on oil mills, gins and industrial plants to sell "Master-Grip" Pulley Covering on liberal commission basis. Exclusive territory to men who travel regularly. Master-Grip Manufacturing Co., Austin, Tex.

**WANTED**—Experienced man for Reverberatory Furnace and White Metal Plant. Good job to right party. Write to Bostwick-Lyon Bronze Co., Waynesboro, Pa.

**EXECUTIVES** and men of proven ability seeking positions find our service extremely satisfactory. Our Mr. H. H. Harrison can confidentially negotiate for you suitable connections as he has done for thousands of others since 1909. Inquiries invited. The National Business Bourse, Inc., Association Building, Chicago.

**A LEADING ORGANIZATION** desiring to fill an important position, for obvious ethical and other reasons, cannot invite directly the candidacy of any particular man. Similarly, no well-connected man will exploit personally his own qualifications, no matter how receptive he may be to overtures. The undersigned has been retained by a national clientele for many years, as a medium for negotiating preliminaries in such cases. Your permission to send booklet discussing this problem and describing the service, will in no degree obligate or compromise you. Strictly confidential. R. W. Bixby, Inc., 303 Lockwood Bldg., Buffalo, N. Y.

**MERCHANDISE WANTED**

**SPLIT CASH** for surplus merchandise job lots, close-outs, discontinued lines, goods-ordered and left-on-hand, etc. (no machinery). No quantity too large. Quick cash for real bargains. Fantus Bros., 1319 S. Oakley Ave., Chicago, Ill.

**STEAMER FOR SALE**

**REAL BARGAIN**—Single screw-propelled steamer Atlantic. Registered dimensions 103.3x23.7x7.5 ft.; 3 decks, 2 large cabins on upper deck, 1 saloon deck, social hall aft, freight space forward, thoroughly overhauled and rebuilt, now at Charleston, S. C.; accommodate about 350 day passengers; built of yellow pine planking, oak frames partly sheathed with galv. iron.

HENRY A. HENNER'S SONS CO.,  
4501 Richmond Street,  
Philadelphia, Pa.

**SUBMERGED PIPE LINES**

**SUBMERGED PIPE LINES**—Absolutely tight submerged pipe line installations at materially reduced cost. B. F. Round, Box 679, Portsmouth, Va.

**MACHINERY AND SUPPLIES**

Back enamel paint in 50 gal. bbls. White and green enamel in 5 and 10 gal. drums. Gov't stock. Will sell cheap. Pratt Thompson, 220 E. Lexington St., Baltimore, Md.

- 4—three wheel ten ton rollers.
- 2—Five ton Tandem rollers.
- 1—Byers Auto Crane on Caterpillar tread.
- 75 H. P. Double drum Reversible Engine, 100 H. P. Erie Boiler.
- 2—Elevating Graders.
- 6—Troy Dump Wagons, practically new. James Carroll, 917 Wainright Building, St. Louis, Mo.

**MACHINERY AND SUPPLIES**

**SAW MILL FOR SALE**—Complete circular saw mill; steam feed, steam nigger, steam leader, Surry Parker skidder, slab trimmer, dry kilns, engines, boilers, generators, logging cars and locomotives, gears, pulleys, shafting, boxes and belt.

Wm. A. Peschau, Box 1143,  
Wilmington, N. C.

**FOR SALE**—Six Hell Gravity Dump Steel Bodies for Ford Trucks. One cu. yd. capacity. Used only a few months. Sixty Dollars each. Cooper Construction Co., Tupelo, Miss.

**FOR SALE**—25 horse power, nearly new, Avery Road Tractor, 3 Troy trailers, total carrying capacity 10½ cu. yds. Fulton R. Gordon, Colorado Bldg., Washington, D. C.

**TRACTORS**—We are offering a limited number of Cletrac Model W "Tank Type" tractors at reduced prices. These tractors are absolutely new and have not been used. Speer & Watkins, Anderson, S. C.

## **SPECIAL ADVERTISEMENTS OF GENERAL INTEREST**

**Modern Fertilizer Mixing Plant  
FOR SALE**

Brand new, suitable for other purposes with small additions. Size 144 by 200 feet. Good track facilities, etc.

Chas. D. Carr, Receiver, Augusta, Ga.

**Have You Ordered Your  
Blue Book of Southern Progress**

**Single Copies 50c**  
**Manufacturers Record, Baltimore, Md.**

**MANUFACTURING PLANT FOR SALE**  
ENTIRE PROPERTY OF THE  
**AMERICAN AND BRITISH MANUFACTURING CORP.**  
BRIDGEPORT, CONNECTICUT

**Ten Main Buildings in Complete Working Order.**  
**Railroad Sidings** **Water Frontage**

The sale includes all the property of the American & British Manufacturing Corporation, in the State of Connecticut, real and personal, assets and effects, and all the right, title and interest of the Receiver and Ancillary Receivers therein, except cash and accounts receivable.

**Real Estate.**—The property to be sold comprises about ten (10) acres of land located in Bridgeport, Connecticut. This land is adjacent to the main line of the New York, New Haven & Hartford Railroad. A railroad siding runs through the property and there is also frontage on the Long Island Sound.

**Buildings.**—There are ten (10) main buildings with some 200,000 square feet of floor space and covering approximately seven (7) acres of land, consisting of offices, factories, tool rooms, forge shops, etc., etc., used in the manufacture of guns and automobiles, etc. In addition there is a garage, horse barn, out-buildings and passageways.

**Machinery.**—The sale includes all heavy or fixed machinery located in the plant or factory.

**Equipment.**—The plant is fully equipped with office furniture, tools, general equipment and merchandise.

**Raw Materials.**—A large stock of raw materials used in the manufacture of guns, ammunition and automobiles are also to be included in the sale.

**Plant open for inspection at any time.**

**For further details apply to**

**WM. HOWARD WAKELEE  
SOUTHBURY, CONN.**

**VALUABLE ICE PLANT,  
FLOUR AND FEED MILL  
FOR SALE**

The undersigned desires to sell its ice plant, flour and feed mill located on a siding of the Baltimore and Ohio Railroad Company. The flour and feed mill buildings are in a good state of repair, and the ice plant and machinery are in excellent repair. The ice storage recently completed of concrete blocks has a capacity of about 800 tons. The plant is the only one in the city of Keyser, which has a population of about 8,000, and is furnishing ice to the surrounding outlying territory, including nearby towns. The plant will pay well on the investment. The one who has managed the plant for many years desires to retire, and the owners prefer a sale rather than to put in charge a new manager. If interested write the undersigned.

**POTOMAC MILLING & ICE COMPANY  
KEYSER, WEST VIRGINIA**



**Plant Sites  
For Sale  
in the  
Birmingham District**

**HYDRO-ELECTRIC POWER  
EQUABLE CLIMATE**

Sites to suit all needs on all railroads. Supplies of coal, coke, iron and steel within trucking distance. Labor situation better than in other industrial centers. Hydro-electric power available. Equable climate. Address

**BIRMINGHAM REALTY CO.  
Owners  
BIRMINGHAM, ALA.**

**OPPORTUNITIES  
Industrial and Agricultural**

The A. & W. P.—W. Ry. of Alabama and Georgia Railroads traverse a territory rich in material and potential resources. Attractive industrial sites. For information apply:

**Commercial & Agricultural  
Dev. Dept.—Above Lines  
Atlanta, Georgia**



**Exceptional Location  
for Industries**

In the heart of the Blue Grass region of Virginia, with exceptional railroad facilities, ample labor supply, located near the main producing station of the Appalachian Power Co. Ideal community for the establishing of overall, glove, tobacco, broom, furniture and canning factories.

*If you are interested, write to*

**B. C. Taylor, Secty.**

**PULASKI KIWANIS CLUB  
PULASKI, VA.**

**THE TEXAS AND PACIFIC RAILWAY  
SERVES**

Dallas

Fort Worth

El Paso

Abilene

Sweetwater

Cisco

Texarkana

IN

TEXAS

New Orleans

Shreveport

Alexandria

IN

LOUISIANA

*Splendid opportunities for manufacture  
and distribution.*

Address

**Frank J. Burke**

Land & Industrial Commissioner  
Dallas, Texas

**Ideal  
Factory  
Locations along the  
Chesapeake and Ohio  
Railway**

which extends from Atlantic Seaboard (Newport News and Norfolk) to the Great Lakes (Chicago and Toledo). Locate your factory accessible to

**Economical Fuel, Excellent Water  
Powers, Natural Gas, Good Labor,  
Ready Markets**

Our Industrial Department invites correspondence with manufacturers and others seeking locations. All inquiries treated confidentially.

**K. T CRAWLEY, Manager**

Industrial Dept., Chesapeake & Ohio Ry. Co., Room 17  
RICHMOND, VIRGINIA

**WAR DEPARTMENT****August**

- Aug. 8—Q. M. SUPPLIES—Camp Dix, N. J., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.
- Aug. 9—Q. M. SUPPLIES—Brooklyn, N. Y., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.
- Aug. 11—Q. M. SUPPLIES—Camp Meade, Md., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.
- Aug. 15—Q. M. SUPPLIES—Norfolk, Va., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.
- Aug. 18—Q. M. SUPPLIES—Charleston, S. C., Auction. For catalog write Q. M. S. O., Candler Warehouse, Atlanta, Ga.
- Aug. 22—Q. M. SUPPLIES—New Orleans, La., Auction. For catalog write Q. M. S. O., Candler Warehouse, Atlanta, Ga.
- Aug. 24—AIR SERVICE SUPPLIES—Park Field, Tenn., Auction. For catalog write Commanding Officer, Park Field, Millington, Tenn.
- Aug. 29—AIR SERVICE SUPPLIES—Americus, Ga., Auction. For catalog write C. O., Air Intermed. Depot, Americus, Ga.
- Aug. 31—Q. M. SUPPLIES—Camp Funston, Kan., Auction. For catalog write Q. M. S. O., 1819 W. Pershing Rd., Chicago, Ill.

**SEND FOR CATALOG****SELLING PROGRAM****September**

- Sept. 6—ORDNANCE SUPPLIES—Rochester, N. Y., Auction. For catalog write Chairman, Phila. Dist. Ord. Salvage Board, Phila., Pa.
- Sept. 12—Q. M. SUPPLIES—Camp McClellan, Ala., Auction. For catalog write Q. M. S. O., Candler Warehouse, Atlanta, Ga.
- Sept. 15—Q. M. SUPPLIES—Camp Meade, Md., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.
- Sept. 19—Q. M. SUPPLIES—Camp Lewis, Wash., Auction. For catalog write Q. M. S. O., Ft. Mason, San Francisco, Calif.
- Sept. 19—ORDNANCE SUPPLIES—Erie, Pa., Auction. For catalog write Chairman, Phila. Dist. Ord. Salvage Board, Phila., Pa.
- Sept. 21—Q. M. SUPPLIES—Omaha, Neb., Auction. For catalog write Q. M. S. O., 1819 W. Pershing Rd., Chicago, Ill.
- \*Sept. 22—AIR SERVICE SUPPLIES—Houston, Tex., Auction. For catalog write C. O., Aviation Gen'l Supply Depot, Houston, Tex.
- Sept. 26—Q. M. SUPPLIES—New Orleans, La., Auction. For catalog write Q. M. S. O., Candler Warehouse, Atlanta, Ga.
- Sept. 28—Q. M. SUPPLIES—Camp Devens, Mass., Auction. For catalog write C. O., Boston Gen'l Intermed. Depot, Boston, Mass.

\* Sales dates indicated by the asterisk are as yet only tentative.

**SEND FOR CATALOG**

**USE IT  
Route S**



After you have noted War Department advertisements, see that your messenger puts them on the desks where they will do the most good. Instruct him to watch for the route sheet and give publications bearing it "Rush" deliveries.

The Government reserves the right to reject any or all bids.

**WAR DEPT**



**T**HAT little piece of paper under the clip has a message for you. It shows a simple double-check on profit opportunities.

Your purchasing agent knows the values in War Department sales. Your men in charge of shops and stocks know their needs in supplies. Co-ordinate that knowledge to your gain by the simple expedient of routing War Department advertisements through interested hands in your establishment.

Sales, either at auction or by sealed bid, are conducted virtually every day. Extensive notice of those sales is given in business papers, the daily press, and in Commerce Reports, a weekly survey of foreign trade issued by the Department of Commerce.

Check the publications in which the advertisements appear, and make sure they

reach the eyes employed to look out for your interests. Then you are prepared to take full advantage of the profit opportunities in War Department offerings.

The final step is easy—participate in the sales. Then the benefits are yours.

Be represented at the next War Department sale.

For detailed information regarding all offerings, write:

**CHIEF, SALES**  
Room 2515, Munitions Bldg.

**PROMOTION SECTION**

Washington, D. C.

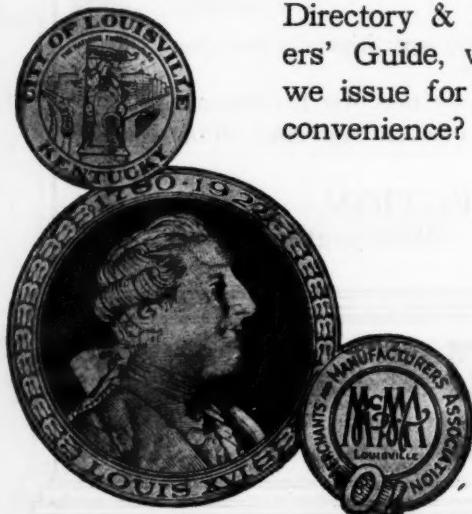
# PARTMENT



# LOUISVILLE

## Issues Buyers' Guide

HAVE you received your copy of the current number of the semi-annual Trade Directory & Buyers' Guide, which we issue for your convenience?



The present issue, containing our formal invitation to you to visit the Louisville market this Fall, is also replete with information of the kind you want—virtually, it's an index of Louisville's leading jobbing and manufacturing interests.

Gives you a comprehensive list of the articles and commodities handled or manufactured, alphabetically arranged for quick reference, and cross indexed to the houses that deal in them.

A Handy book to have on your desk when you need things quick—no cost, no obligation. A post card will bring you a copy.

**MERCHANTS & MANUFACTURERS ASSN.  
INCORPORATED**  
*"Refunds Your Fare From Anywhere"*

ROBERT H. KEEF

# RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES

## WANTED PLANTS FOR WRECKING

or dismantling purposes. Buyers of iron, steel and metal scrap.

**H. KLAFF & CO.**  
Central Ave., Gough & Stiles Sts.  
BALTIMORE, MD.

## FOR SALE 80 H. P. HORIZONTAL BOILER

With Fittings  
MT. AIRY MANTEL & TABLE CO.  
Mt. Airy, N. C.

## FOR SALE Used Machinery THREE PRESS OIL MILL

equipped, including gins

Griffin Oil Mill  
Griffin, Ga.

## FOR SALE 1—No. 80 American Blower Sirroco Induced Draft Fan in good condition.

W. N. CLARK COMPANY  
Rochester, N. Y.

## NEW AND SECOND-HAND MACHINE TOOLS

HENRY PRENTISS & CO.  
Incorporated

149 Broadway                      New York, N. Y.  
Warehouse: Jersey City

## HACKLEY MORRISON COMPANY 1708-22 Lewis St.,              Richmond, Va. Dealers in MACHINERY AND MECHANICAL SUPPLIES

Large storage ware-rooms and yards with trackage, crane facilities and general repair shops.

More than one hundred car loads in stock secured principally from Government auction sales at such sacrificed prices that we are offering unprecedented bargains; four thousand horse power of boilers, water and fire tube; forty electric motors; fifty tons steam piping; one thousand steel and cast split pulleys; hangers; engines; pumps; lathes; condensers; tractors; farm lighting plants; corrugated galvanized iron; ice machines; hoisting engines; air compressors, etc.

## FOR SALE

1—100 H. P. Bust Water-tube Boiler, complete, with stokers.  
2—350 H. P. Vogt Water-tube Boilers, complete, with stokers.  
3—300 H. P. Heine Water-tube Boilers, hand fired.  
1—500 H. P. Springfield Scotch Type Boiler.  
1—72" x 18" H. R. T. lap side seam, triple riveted.  
1—60" x 18" H. R. T. butt joint, triple riveted.

CHAS. T. LEHMANN              Birmingham, Ala.

## FOR SALE

1—Heavy Duty I. & E. Greenwald Engine size 17 by 42. At  $\frac{1}{4}$  cut off, 140 pound Boiler pressure, 84 H. P. M. Indicated Horse Power 317.  
1—14 Ft. Drive Wheel 12 grooves for  $\frac{1}{2}$  inch rope. One Gearbox. Steam Separator. Engine and all working parts in good order.  
One 10 x 12—15 H.P. I. & E. Greenwald Slide Valve Engine.

STANDARD RICE COMPANY, INC.  
Houston, Texas

## WATER TUBE BOILER For Sale

Cheap: 1—250 Horse Power Water Tube Boiler, with all fittings, nearly new. Detailed information on request.

Page Boiler Company  
810 Larrabee St.              Chicago, Ill.

## OIL ENGINE FOR SALE

One 280 H.P. De La Vergne 2 cylinder oil engine arranged for belt drive. Can be seen running and is priced attractively for quick action. Address

JOHN R. PROCTOR, INC.  
Bayonne, N. J.

## FOR SALE

1—Riley-Feed Water Heater, 20" in Diameter, practically new. \$180.00 F. O. B. Balto., Md.

BECKERLEY & TRUSLER  
Industrial & Marine Supplies & Equipment  
306 Stewart Building, Baltimore, Md.

## CRUSHER 16" x 10" FARRELL JAW CRUSHER

Send for our August list of the largest stock in the United States of slightly used and thoroughly overhauled MACHINE TOOLS, POWER, ELECTRICAL AND CONTRACTORS' EQUIPMENT.

Satisfaction Guaranteed or Money Refunded.

**WICKES MACHINERY CO.**  
JERSEY CITY, N. J.  
Established 1900

## CORLISS ENGINES

20—350 H.P. Allis-Chalmers Corliss Engines, heavy duty type, right or left hand, either new or slightly used.

These engines are the biggest bargains on the used machinery market, today. Specifications or request.

NASHVILLE INDUSTRIAL CORPORATION  
Industrial Plant Sites  
Jacksonville, Tennessee

## PIPE & ROTARY RIGS

All size pipe from 1" to 12 $\frac{1}{2}$ " for sale at half price.

Also in the market for any amount of new or used pipe any size up to 10".

Louisiana Iron & Supply Co.  
2001 Texas Ave., Shreveport, La.

## FOR SALE

Second-hand Machinery of every description.

JACOB LEVY & BROS.  
712 W. Main Street - LOUISVILLE, KY.

1—42" and 54" J. A. Fay Band Bip Saw. 1—54" Gilbert Band Resaw.  
1—Glen Cove 8" 4-side Matcher. 1—Preble 10" 4-side Matcher.  
1—J. B. Hoyt 14" 4-side Matcher. 1—24" 3-drum Berlin Sander.  
1—30" 2-drum Fay. 1—26 x 12 Double Surface, endless bed type.  
1—48" Circular Resaw—power feed. 1—50" Circular Resaw—power feed.  
MOULDERS.

1—7" 3-side Houston. 1—7" 4-side Fay.  
1—9" 4-side Williamsport. 1—7" 3-side Hamilton.  
Boilers, Hoists, Pumps, Engines, Ironworking Machinery, Belting, Shafting, Pulleys, Hangers.

THE CLEVELAND BELTING & MACHINERY CO.  
1524 University Road              CLEVELAND, OHIO

## NEW BOILERS BELOW MANUFACTURERS' COSTS

125 H. P. Horizontal Return Tubular Boilers, 72" x 16"—A. S. M. E. Specifications.

80 H. P. Return Tubular Boilers A. S. M. E. Specifications.

80 H. P. Locomotive Boilers Mounted on trucks—A. S. M. E. Specifications.

25 H. P. Vertical Boilers.

Manufactured for us by Sotter Bros., Inc.

**POTTSTOWN STEEL COMPANY**  
DOUGLASSVILLE, PA.

# **BUY IT FROM THE NAVY**

## **BY SEALED BIDS**

Cat. No. 115-B—opening 11:00 A.M., August 28, 1922. Consisting of 3,590,392-lbs. (approx) Brass and Copper Pipe. Ranging in size from one-eighth to eight inches in diameter.

Cat. No. 123-B—opening 11:00 A.M., September 1, 1922. Consisting of 967,000-lbs. (approx) Seamless Brass Tubing. Ranging in size from seven thirty-seconds O.D. by 0.047" wall to seven and one-half inch O.D. by 0.065" wall.

Full description and locations of this pipe and tubing, is given in the above catalogues (No. 115-B and No. 123-B) which may be obtained and inspection arranged for by communicating with any of the following:

Supply Officers at Navy Yards:—

- |  |                   |  |
|--|-------------------|--|
| (1) Philadelphia, Pa.                            | (3) Norfolk, Va.  | (5) Mare Island, Calif.  |
| (2) Charleston, S. C.                            | (4) Boston, Mass. | (6) Puget Sound, Wash.   |
| (7) Naval Training Station,<br>Great Lakes, Ill. |                   | (8) Board of Survey, Appraisal and Sale,<br>Naval Supply Depot, S. Brooklyn, N. Y. |

U. S. Navy Sales Representatives,

- |  |  |
|--|--|
| (9) 215 Westminster Bldg., Chicago, Ill. | (10) 822 Shipping Board Bldg., New York, N. Y. |
|--|--|

Bids on either or both of these sales must be in the form as given in the above catalogues. Bids should be plainly marked and addressed to the (Where they will be publically opened at the time designated above).

## **U. S. NAVY CENTRAL SALES OFFICE**

### **NAVY YARD WASHINGTON, D. C.**

#### **REBUILT MACHINERY**

1—300 H.P. Westinghouse, type CX, 3 phase, 60 cycle, 220-440 Volt, 600 R.P.M. motor.  
 1—250 H.P. Crocker-Wheeler, 3 phase, 60 cycle, 220-440 V. 585 R.P.M. motor slip ring.  
 1—200 H.P. Westinghouse, type C, 3 phase, 60 cycle, 220-440 Volt, 600 R.P.M. motor.  
 1—125 K.W. G.E. 110 Volt, direct current Generator, direct connected to Phoenix Engine.  
 1—75 K.W. Westinghouse, 110 Volt, direct current. Generator, direct connected to Erie City Ball self-oiling Engine.  
 1—50 K.W. G.E. 110 V. direct current, generator, direct connected to Erie City Ball, enclosed Crank Engine.  
 Motors, Generators, Steam, Gas & Oil Engines, Compressors, Pumps, Boilers, Hoists, etc.

**W. A. Carrell & Company**  
 211 Second Ave. Pittsburgh, Pa.

ESTABLISHED 1838

INCORPORATED 1907

#### **GEO. F. MOTTER'S SONS**

Steam and Electrical  
Engineers  
YORK, PA.

Boilers, Engines,  
Tanks, Stacks,  
Heating Contractors,  
Machinery Supplies,  
Steam Power Plant  
Equipment,  
Machine Repairs

Motors, Generators,  
Power Equipment,  
Factory Supplies,  
Re-winding,  
Construction  
and Repairing

#### **RETURN TUBULAR LOCOMOTIVE**

# **BOILERS**

#### **WATER TUBE SCOTCH MARINE**

A LARGE STOCK OF HIGH-GRADE BOILERS OF PRACTICALLY ALL SIZES, TYPES AND MAKES, TAKEN OVER FROM DU PONT CHEMICAL COMPANY'S AND OTHER PLANTS WITH PRODUCTION RECORDS—RECONDITIONED, OFFERED SUBJECT TO ANY INSPECTION, AVAILABLE NOW!

**"SAVE TIME AND MONEY ON YOUR POWER INSTALLATION—LET DAVIS FURNISH THE BOILERS"**

LONG DISTANCE  
TELEPHONE  
CENTRAL 1494

**J. F. DAVIS**

122-1123-1124  
HARRIS TRUST BUILDING  
CHICAGO, ILL.

# Compare These Motor Prices

These are only a few of the bargains we offer, picked at random from our large stock.

All motors complete with pulleys and bases, and 7½ H. P. and over include compensators

## NEW MOTORS

HP.	Make	Phase	Type	RPM.	Cycle	Volts	Price
550	Crock-Whlr.	3	sl. ring	1170	60	2200	\$1875.00
60	Gener. Elec.	3	KT	1160	60	220	555.00
4-50	Gener. Elec.	3	sl. ring	690	60	440	775.00
8-50	Gener. Elec.	3	sl. ring	1200	60	220	600.00
12-25	Gener. Elec.	3	KT	1200	60	220	302.00
5-20	Gener. Elec.	3	KT	1200	60	220	267.00
4-15	Gener. Elec.	3	KT	1800	60	220	216.00
5-10	Bell	3	compoun.	1800	60	220	216.00
6-7½	Bell	3	compoun.	1800	60	220	190.00
13-5	R & M.	3		1700	60	220	.94.00
15-3	Gener. Elec.	3.	KT	1800	60	550	65.41
6-10	Gener. Elec.	2	KQ	1200	60	220	216.00
200-1/4	Western El.	1	SA	1725	60	110	17.75
55-1/4	Western El.	SD		1725	60	110	18.75

## USED MOTORS

HP.	Make	Phase	Type	RPM.	Cycle	Volts	Price
400	Whse.	3	synchro.	450	60	2200	\$1000.00
200	Gener. Elec.	3	sl. ring	600	60	2200	1400.00
200	Gener. Elec.	3	wound ro.	580	60	220	975.00
2-100	Gener. Elec.	3	sl. ring	514	60	440	1100.00
75	Gener. Elec.	3	sl. ring	900	60	2200	825.00
2-50	Fks. Mse.	3	sq. ca.	900	60	220	325.00
2-50	Burke	3	sl. ring	1200	60	220	475.00
2-37	Gener. Elec.	3	sl. ring	750	60	220	450.00
2-25	Wagner	3	sl. ring	1150	60	440	375.00
2-30	Ideal	3	sq. ca.	1150	60	440	300.00
200	Whse.	2	sl. ring	580	60	220	1275.00
133	Gener. Elec.	2	synchro.	900	60	2200	600.00
150KVA	Stanley	2	alterna.	900	60	2400	550.00
75	Burke	2	sq. ca.	360	60	220	750.00
90	Diehl		shunt	460		240	575.00
90	Gener. Elec.		compoun.	625		220	775.00
90	Whse.		compoun.	675		220	625.00
75	Diehl		shunt	340		220	575.00
4-47	Whse.		compoun.	609		550	375.00
3-35	Lincoln	3	sq. ca.	1200	60	440	245.00

Some have not been used over 60 days.

All of the above carry our usual ONE YEAR GUARANTEE.

LARGEST STOCK IN AMERICA.

**NATHAN KLEIN & CO.**  
MOTORS 208 CENTER ST., N.Y. DYNAMOS

## WATER TUBE BOILERS

Two (2) 338 HP Heine Water Tube Boilers, pressure allowed last inspection 200 lbs., single drum type, hand fired, complete with Bayer Soot Blowers, full front, all castings, and steam trimmings. Immediate Shipment. An unusual opportunity to secure a pair of high grade boilers at an exceptionally low figure.

**FRANK TOOMEY, Inc.**

127-131 N. 3rd St.

Philadelphia

## IMMEDIATE DELIVERY

### 2 NEW RYERSON KLING GEARED PUNCHES

72" Throat.

Capacity: Punch 1¼" thru 1" plate.

Shear—¾" plate—2" round bars—4"x4"  
x½" angles arranged for motor drive.

Factory price—\$3169—

**Our Price \$1780**

F. O. B. Philadelphia

**IMMEDIATE ACTION NECESSARY!**

**INDUSTRIAL PLANTS CORP.**

25 Church St.

NEW YORK, N. Y.

## RESALE DEPARTMENT

August 3, 1922.  
Manufacturers Record.

# Guaranteed MACHINERY and EQUIPMENT

### AIR COMPRESSORS

- 1—Sullivan Straight Line Air Compressor, 24" steam cylinder, 26" low pressure air cylinder, 16% high pressure air cylinder, 30" stroke, capacity 1850 cu. ft. per minute.
- 1—Laidlow-Dunn & Gordon Belt Driven Air Compressor, size 25" x 15" x 18", capacity 1750 cu. ft.
- 1—Chicago Pneumatic Single Stage Steam Driven Compressor, two cylinders, size 22" x 16": capacity 1700 cu. ft.
- 1—Ingersoll-Band Two Stage Belt Driven Air Compressors, size 19" x 12" x 16": capacity 888 cu. ft.
- 1—Laidlow-Dunn & Gordon Belt Driven Air Compressor, size 25" x 15" x 18": capacity 750 cu. ft.
- 1—Ingersoll-Sargent High Pressure Steam Driven Air Compressor, two stage, low pressure cylinder 18" x 12", high pressure cylinder 12" x 12": capacity 600 cu. ft.
- 1—Clayton Duplex Steam Driven Air Compressor, duplex steam and two stage air cylinders, dial stroke 10", low pressure air cylinder 16%", high pressure air cylinder 10", stroke 10": capacity 425 cu. ft.
- 1—Chicago Pneumatic Fuel Oil Driven Compressor, capacity 300 cu. ft., 100 lbs. pressure.
- 12—New York Air Brake Co. Locomotive Type Two Stage Air Compressors, 10" low pressure cylinder, 8" high pressure cylinder, 8" stroke, 7" steam cylinders.

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- 1—16" x 8 1/2" x 12" Duplex Steam.
- 1—14" x 10 1/2" x 10" Duplex Steam.
- 1—12" x 7" x 10" Duplex Steam.
- 1—10" x 6" x 10" Duplex Steam.
- 3—8" x 4" x 6" Duplex Steam.
- 4—5 1/2" x 3 1/2" x 5" Duplex Steam.
- 2—4 1/2" x 3 1/2" x 4" Duplex Steam.
- 1—8" Deane Triplex Single Acting Power Pump.
- 1—Kingsford Horizontal Centrifugal Water Pump, 24" suction, 24" discharge.
- 1—Platts Iron Works Horizontal Centrifugal Water pump, 14" suction, 12" discharge.
- 1—Fulton Horizontal Centrifugal Water Pump, 12" suction, 10" discharge.

### BOILERS

- 1—B. & W., 284 H.P. Water Tube; 150 lbs. pressure.
- 1—Eric City, 220 H.P. Water Tube; 150 lbs. pressure.
- 1—72" x 18" Horizontal Tubular; 125 lbs. pressure.
- 2—66" x 20" Horizontal Tubular; 115 lbs. pressure.
- 1—72" x 18" Horizontal Tubular; 115 lbs. pressure.
- 1—100 H.P. Locomotive Fire Box; 90 lbs. pressure.
- 1—50 H.P. Locomotive Fire Box; 90 lbs. pressure.
- 1—50 H.P. Internally Fired; 90 lbs. pressure.
- 1—30 Vertical; 110 lbs. pressure.
- 1—20 H.P. Vertical; 100 lbs. pressure.

### ENGINES

- 1—28" x 48" Hamilton Right Hand Corliss.
- 1—20" x 42" Ohio Right Hand Corliss.
- 1—18" x 42" Allis Right Hand Corliss.
- 1—12" x 24" Buckeye Left Hand.
- 1—12" x 24" Douglas Plain Slide Valve.
- 1—10" x 12" Chandler Taylor Plain Slide Valve.
- 1—10" x 10" Armstrong & Simms Automatic.

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- 6—Hot Water Feed Tanks, 48" dia., 10' long, with one convex and one concave head, man-hole in head, about 6" plate.
- 6—Heavy Constructed Filter Tanks, about 66" dia., 12' high, with dashed heads, 1/4" plate, 2—Open Top Storage Tanks, 4' 9" wide, 4' 8" deep, 10' 6" long; 7 1/2" plate.
- 1—Open Top Storage Tank, 9' 6" wide, 4' 9" deep, 10' 6" long; 7 1/2" plate.
- 2—Open Top Storage Tanks, 6' 9" wide, 5' deep, 10' 3" long; 16" plate.
- 2—Open Top Storage Tanks, 10' wide, 3' 3" deep, 16' 3" long; 7 1/2" plate.
- 25—Complete Underground Gasoline Storage Outfits, consisting of 160 gal. galvanized tank, 14 gauge material, size 31x48 inches, with hand pump also plumb and complete.
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- 50—Government Underground Black Steel Storage Tanks, 1000 gal. capacity, size 64 in. by 6 ft., 1/4 in. material.
- 10—Government Underground Black Steel Storage Tanks, 2000 gal. capacity, size 5 ft. 4 in. by 1 ft. 6 in. material.
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- 1—500 K.W. Westinghouse, 3 phase, 60 cycle, 2200 volt Generator, direct connected to a 26x42 Murray Corliss Engine.
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- 1—300 kw. General Electric, 3 phase, 60 cycle, 2300 volt Turbo Generator Set, Condensing.
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2—26 x 50 x 48 1500 HP 100 RPM Horizontal Cross Compound Condensing Corliss Engine, Direct connected to	
1—Continuous current generator 54004 Type MP Class 14-800-100 Form H Amps. 1391. Speed 100 volts no load 525 full load 575 direct connected, with motor.	
1—A.C. Generator Type AQB 623060 Class 72-800 A 100 Form E Volts 2300 speed 100 amps, 174 direct connected	
1—7 x 12 x 15 x 12 two stage single horizontal double acting air compressor 150 lbs working pressure.	
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1—Inch belted motor driven centrifugal well pump.	
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1—5½ x 8½ x 5 horizontal duplex oil pump.	
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2—Belts 110" x 4" x 1" thick	
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**RESALE DEPARTMENT****50-ton 16x24" Four-Wheel Loco.**

Modern Sta. Ga. Saddle Tank, 175 lbs. Steam Recently Overhauled

Loco. Cranes, Steam Shovels, Cars, Rails, Switches

**E. H. WILSON & COMPANY**  
COMMERCIAL TRUST BUILDING  
PHILADELPHIA

**FOR SALE**

Thoroughly overhauled used

**ROAD ROLLERS**

In fine condition. Kelly-Springfield, Buffalo-Pitts, Monarch, Baker, Case, Austin, Huber. Real Money Saving Bargains. Will furnish Full Description and Price on application.

Address P. O. BOX 235  
GALION, OHIO

**ASPHALT PLANT SPECIAL**

We have for sale one rebuilt No. 2 Merriman 1200 yard One-Car Steam Melting Asphalt Plant. In fine condition, on which we can make good delivery.

Here's an opportunity to get a real plant quickly and at a right price. Better get in touch with us immediately.

**The East Iron & Machine Co.**  
Lima, Ohio

**USED EQUIPMENT FOR SALE IMMEDIATE DELIVERY****CONCRETE BUCKETS**

7-2½ yd. Bottom Dumps, Stuebner Concrete Buckets. Located at Spartanburg, S. C. Good condition.

5-Side-dump, 1 yd. Concrete Buckets. Located at Spartanburg, S. C.

**GASOLINE ENGINES**

2-4 H.P. Fairbanks-Morse Gasoline Engines. Good condition. Located at Spartanburg, S. C.

**STEEL GUYS**

10,000 ft. Galvanized Crucible Steel Guys, ½ in. to 1 in. Located at Spartanburg, S. C.

**DERRICK FITTINGS**

6-complete sets derrick irons for guy derricks, with steel Bull wheel. Located at Spartanburg, S. C.

1-15 ton traveling derrick, 50 ft. boom.

3-10 ton wood derricks, 85 ft. masts, 80 ft. booms.

**Miscellaneous**

1-10-H. P. 60 cycle, 220 volt motor Westinghouse.

1-All steel log washer together with counter shaft belts and screens. Miscellaneous lot of piping, valves, and fittings, wheelbarrows, picks, shovels, and road scraper.

Located at Blue Ridge, Ga.

We have also a miscellaneous assortment of small tools of all descriptions, including wire, lot of wrought iron pipe and spiral steel riveted pipe, blacksmith forges, anvils, pipe tongs, pipe vices, blacksmith vices, machinist vices, railroad track jacks, hydraulic jacks, screw jacks, steam drill steel, track bolts, track spikes, nails, bolt spikes and various other small material which we will sell at prices considerably less than the market.

We also have approximately 2,100 lin. ft. of 56 lb. reeling rail.

Also other equipment not listed

**Willard, Boggs & Co.**  
Rex Theatre Bldg., SPARTANBURG, S. C.

**RAILROAD and CONSTRUCTION EQUIPMENT IMMEDIATE DELIVERY**

Thomas F. Carey Co.  
120 Liberty St., New York, N. Y.

**HOLT CATERPILLAR TRACTORS For Sale**

One 5-ton and one 10-ton. Used only four months logging.

Also six Lindsay 8-wheel wagons.

**THE SUMPTER HARDWOOD CO.**  
SUMPTER, S. C.

**GEORGIA CAR & LOCOMOTIVE COMPANY**

Offices and Works, Atlanta, Georgia

**REBUILT RAILROAD EQUIPMENT**

Locomotives—Cars—Coaches  
Standard Trucks for Logging

**REPAIR PARTS for CARS and LOCOMOTIVES****GASOLINE LOCOMOTIVE**

Whitcomb, 36" gauge, six ton, four cylinder, class "E" with high tension magneto, recently overhauled and in good mechanical condition. Exceptional bargain.

C. O. KITSON  
P. O. Box 2, Henry, Va.

**FOR SALE**

1 Marion Caterpillar Shovel, Mod. 31, Shop No. 4173  
16 Western Dump Cars, 36-in. ga. 4-yd. 2-way, hv. duty  
5 Peterbilt Locotrucks, 18-l., 36-in. ga., full saddle tank  
2-Kelly-Kingston Wall Drill, 10-in. borer, two men drill  
2-Kelly-Springfield Steam Rollers, 10-ton, 3-wheel.  
All above in good working condition, just finished work at Baltimore, Md.

Boilers, Hoisting Engines, Compressors, Road Equipment, Etc.

Continental Bldg. D. C. ELPHINSTONE, Baltimore, Md.

**35 Ton McMYLER LOCOMOTIVE CRANE**

50' Boom—Double Drums—8 Wheel MCB.  
Good Condition

PHILIP T. KING  
30 CHURCH ST., NEW YORK

**BARGAINS HOISTING ENGINES**

2-9½" x 12" Lambert D. C. D. D. with A. S. M. E. Boiler.

1-8½" x 10" Lambert D. C. D. D. with extra large A. S. M. E. Boiler.

2-30-H. P. Lidgerwood D. D. Gasoline Engines.

50-additional Engines in stock almost any size and every make.

**AUTO CRANE**

Type C Byers Auto Crane with A. S. M. E. Boiler.

**COMPRESSORS**

20 and 12 x 14 Chicago Pneumatic Tool Co. belted Air Compressor 1145-cu. ft.

22 and 14 x 18 Laddlow Dunn & Gordon belted Air Compressor 1200-cu. ft.

New and Used Boilers almost every size and for every duty.

**LOUIS A. TARR, INC.**  
N. W. Cor. Sharp & Conway Sts.  
BALTIMORE, MD.

August 3, 1922.  
Manufacturers Record.

**FOR SALE**

50-4 wheel Std. gauge flat cars.  
4-60 M Lbs. cap. steel underframe dump  
cylinder cars.  
3 ton Std. gauge Plymouth Gas. Locomotive.

**WALTER A. ZELNICKER SUPPLY CO.**  
ST. LOUIS.  
Write for our new big bulletin No. 300

**FOR SALE****2 STEAM SHOVELS  
3/4-YARD DIPPER**

Standard Equipment.  
New 1921.

Excellent Condition.  
Immediate Shipment.  
Caterpillar and Traction Wheels.

**Address A-250, Care**  
Manufacturers Record  
Baltimore, Md.

**FOR SALE OR RENT**

Steam & Electric COMPRESSORS  
of all sizes.

Hoisting Engines  
Derricks  
Locomotive Cranes  
Concrete Mixers  
Orange Peel and Clam Shell Buckets  
Motors, Generator, and Refrigerator Units  
Steam and Electric Shovels.

COMPLETE STOCK READY FOR IMMEDIATE DELIVERY

**ARCHER ARMSTRONG & CO.**  
4839 A Grand Central Terminal, N. Y. City  
PHONE Vanderbilt 10408

**LEWTER F. HOBBS**

INCORPORATED

Contractors Equipment

Machinery

Motor Trucks

New and Rebuilt

**TWO TRACTORS**

Monarchs—30-18

40 h.p. motors.

Full Crawler treads.

Never used.

\$2000 each.

NORFOLK, VIRGINIA

# HOISTS DERRICKS

## ELECTRIC HOIST AND DERRICK \$1600

PRICES F. O. B. CARS, HOG ISLAND, PA.

### You Save at Least \$2000

These Hoists and Derricks are standard late models, manufactured by The American Hoist & Derrick Co., St. Paul, Minn. They are almost new, and every one is GUARANTEED to be in first-class running order.

The Hoists have two drums and swingers, and are complete with Starting and Control Equipment. Either side or bank control, and rated 6000 pounds single line on each hoisting drum. Slewing rope 36 ft. per minute, and hoisting rope speed 160 ft. per minute. The MOTORS are Otis 37 H.P. A.C., 60 cycle, 3 phase, 440 volt, slip-ring induction type and, if desired, may be changed to suit the individual current requirements of purchasers at cost.

#### DIMENSIONS OF DERRICKS

Mast..... 16 in. square, 40 ft. high.  
Boom..... Made of (2) 14 in. sq. timber 48 ft. long spliced to lengths of 80 ft. with (2)  $\frac{3}{8}$  in. and (2)  $1\frac{1}{8}$  in. truss rods.  
Stiff Legs. 14 in. sq., 60 ft. long or 16 in. sq. 50 ft. long, will furnish either length desired, capacity 5 to 12 tons. Bull wheel 16 ft. dia. Principal sheaves 16 in. dia. and 14 in. single blocks.

The Cable which was formerly used will be given with each purchase of a Hoist and Derrick.

These Hoists and Derricks are assembled on the Grounds at Hog Island and may be inspected at any time. This Equipment is being sold complete and in units of a Hoist or Derrick if desired. Immediate shipment can be made anywhere, but QUICK ACTION IS IMPERATIVE.

Wire, Phone or Write for Detailed Information, Folder, Etc.

**THE ELECTRIC HOIST & DERRICK CO.**

WAREHOUSE NO. 10, HOG ISLAND, PA.

### HYMAN-MICHAELS COMPANY

Peoples Gas Building, Chicago

Headquarters for

### NEW—RAILS—RELAYERS

Offices at

New York  
San Francisco

Pittsburgh  
Washington

St. Louis  
E. Chicago, Ind.

### HENRY H. BABER NEW and RELAY RAILS

Logging Equipment, Track Materials and Supplies  
LOCOMOTIVES, CARS, STEAM SHOVELS and CRANES  
Dickson Building NORFOLK, VA.

**FOR SALE**  
**ONE PORTABLE CRUSHER OUTFIT**  
consisting of the following.  
1—No. 2½ Climax Jaw Crusher, 10"x20" Cap. 15 to 25 tons per hour.  
Above fitted with Manganese Discs, Bin, Elevator, Screen and 25 h.p. 220 V. Motor.  
Outfit is as good as new and the price is right.

ALFRED J. FORSCHNER  
Real Estate Trust Bldg. Phila., Penna.

### BUY IT FROM THE NAVY

Sealed Proposals will be opened

**11 A. M. AUGUST 9, 1922**

at the

**U. S. NAVY CENTRAL SALES OFFICE**

on

### 36 LOCOMOTIVE CRANES

Ranging from 5 to 30 tons capacity

Located in Naval Districts:

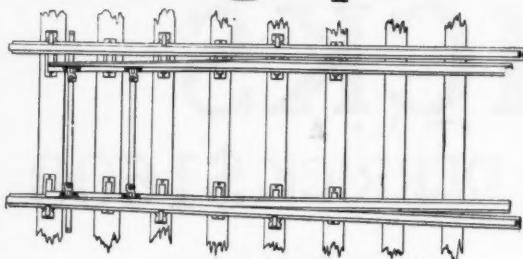
17 at Boston	2 at New Orleans
8 at New York	4 at Charleston
2 at Norfolk	3 at Philadelphia

As these cranes have been used prospective purchasers are requested to make physical inspection before placing their bid. Communicate with the Officer in Charge at Navy Yard where cranes are located to arrange for inspection.

Write or wire for Catalog No. 120-B, which contains all available information, including names of manufacturers, terms of sale, and sealed proposal forms.

**U. S. NAVY CENTRAL SALES OFFICE**  
Navy Yard Washington, D. C.

# the right switch for the right place



We've made this Design No. 95 split switch for the place where you use 50 to 85-pound rails, but where the traffic isn't excessively heavy. It's built right, with the same care that all "American" products get and is plenty strong enough for anything short of heavy traffic.

*Just what you want  
for your sidings*

American Frog & Switch Company  
Hamilton, Ohio

## RAILS NEW AND RELAYING

### Track Accessories

NATIONAL STEEL RAIL CO.  
I. H. COHN, President  
Third National Bank Bldg.

St. Louis, Mo.

### FOR SALE

We are now taking up 1000 tons first quality 90# ASCE section Relaying Rail complete with angle bars that we will sell in any quantity not less than a carload at a bargain.

Write, wire or telephone.  
LOUIS COHEN & SON,  
Wilkesbarre, Pa.

### RAILS IN STOCK

With Angle bars to match all sections.  
Wire or write for prices.

M. K. FRANK  
FRICK BUILDING PITTSBURGH, PA.

## MARION MODEL TWENTY-EIGHT

5/8 yard Steam Shovel.

In good condition.

STANDARD SAND & GRAVEL  
CORPORATION  
LILLINGTON, N. C.

### FOR SALE

The West Va. Rail Co.  
HUNTINGTON, W. VA.

Manufacturers Light Steel Rails  
12, 14, 20, 25, 30, 35, 40, 45 lbs. per yd.  
We are also dealers in Relaying Rails.  
All Sizes

### RELAYING RAILS

56-60-65-67-70-75-80-90s  
with angle bars

Steam Shovels—Locomotives—Cars  
Railway and Contractor's Equipment.

E. C. SHERWOOD  
46 CHURCH STREET, NEW YORK, N. Y.

### RAILS NEW & RELAYING ALL WEIGHTS

Let us know your needs. We may have material  
in stock near you.

WE BUY RAILS FIT TO RE-LAY  
Robinson & Orr Pittsburgh, Pa.  
New Frogs and Switches at low prices.

### RAILS

60-70-80-85 lb. relayers

### FROGS & SWITCHES

70-80-85 lb. frogs, switches, guard  
rails, stands, etc.

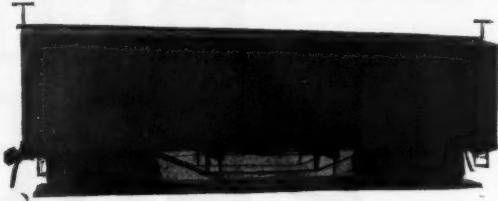
### ROAD MACHINERY

Pavers, mixers, rollers, shovels,  
cranes, crushers, etc.

### HENRY LEVIS & CO.

Commercial Trust Bldg., Philadelphia, Pa.

## RAILWAY EQUIPMENT -- BOX CARS



Have 125 cars, 36 ft. long, 60,000 lbs. capacity. Rebuilt ready for shipment.

## LOCOMOTIVES

FOR ALL CLASSES OF SERVICE — VARIOUS TYPES. Narrow and standard gauge. Rod and geared. 5 to 100 Tons in weight.

## CRANES, ETC.

- 1-10 Ton Amr. Hoist; Boom 43'0"
- 1-17 Ton Industrial; Boom 50'0"
- 1-American R. R. Ditcher;  $\frac{1}{2}$  Yard Bucket

20-All Steel Flat cars, 60,000 lbs. and 80,000 lbs. capacity. Also carry in stock, Freight and Passenger Cars, Dump Cars, etc. Have large lot 60,000 lbs., 80,000 lbs. and 100,000 lbs. capacity Freight car trucks.

COMPLETELY REBUILT IN OUR SHOPS, PLACED IN FIRST CLASS CONDITION; IMMEDIATE SHIPMENT FROM STOCK

SOUTHERN IRON & EQUIPMENT CO.  
(Est. 1889)

Main office and plant  
Atlanta, Ga.

Branch Office,  
New Orleans, La.

## RAILS-TANKS

125 tons 60 pound relaying rails, with frogs and switches, at Baltimore. A-1 condition. Steel tanks, round, square 50 to 500 gals.

H. KLAFF & CO.  
Central Ave., Gough & Stiles Sts.  
BALTIMORE, MD.

## NEW RAILS RELAY

650 Tons 56-Lb. Rail  
150 Tons 35-Lb. Rail

SINGER IRON & STEEL CO.  
506 First Nat'l Bank Bldg., Houston, Texas

## LOCOMOTIVE CRANE

15-ton, 8-wheel Brown Hoist, built 1918. A.S.M.E. boiler, 50 ft. boom, 20 ft. ext., double drums, 1-yd. clam shell bucket, Perfect condition, like new.

GREY STEEL PRODUCTS CO.  
111 Broadway  
New York, N. Y.

## LOCOMOTIVE CRANES FOR SALE

- 1-Browning 15-ton 8-wheel 46 ft. boom, double drums.
- 2-Browning 4-wheel electrically operated.
- 2-Industrial 15-ton 8-wheel.
- 1-Industrial 7½-ton 4-wheel.

HOISTING MACHINERY COMPANY  
50 Church Street - - - New York

## RAILS Heavy and Light Sections

### TIE PLATES

### FROGS — SWITCHES

S. W. LINDHEIMER  
First National Park Bldg.  
CHICAGO

## LOCOMOTIVE CRANES

1—20 Ton Industrial 8 wheel, double drum, 50 ft. boom, 1917, good condition.  
1—15 Ton Brown-Holst 8 Wheel 42-ft. boom, Single drum.  
1—17 Ton Browning 8 Wheel Double Drum, Lap Seam Boiler 42-ft. boom. Rebuilt. Perfect condition.

### AIR COMPRESSOR

1—1955 Cu. Ft. Ingersoll-Band Imperial Type XPV-3 Steam Driven Air Compressor with intercooler. Condition like new.

### INDUSTRIAL TRACK

#### LOCOMOTIVE

1—12 x 18 American Saddle Tank, 0-4-0. Standard Gauge approximate weight 30 Tons. New December 1912. M. C. B. and L. C. C. Full Extended Tank. Westinghouse Air Pump and straight-line air. Completely rebuilt.

#### STONE CRUSHING PLANT

1—No. 4 Champion entire outfit mounted on wheels. Complete with 3-compartment bin, screen and elevator. Jaws 9 in. x 15 in. capacity about 150 tons per day. Excellent Shape.

**B. M. WEISS**

1324 Widener Building Phone-Locust 4816 Philadelphia, Pa.

## KILBY FROG & SWITCH COMPANY

BIRMINGHAM, ALABAMA

Manufacturers

FROGS, SWITCHES, CROSSINGS, Etc.

## THE WEIR FROG CO.

Manufacturers of

Frogs, Switches, Crossings, Rail Braces, etc.  
CINCINNATI, OHIO

Manufacturers of Balkwill Articulated Cast Manganese Crossings

## RELAYING RAILS

2000 tons 56 lb. section with fastenings  
2100 tons 60 lb. section with fastenings  
1000 tons 70 lb. section with fastenings  
All in first-class condition ready for instant shipment.  
Very advantageously situated for export shipments.

**KARASIK, FRIEDMAN & CO., Inc.**  
WOOLWORTH BLDG., NEW YORK

### FOR SALE OR RENT

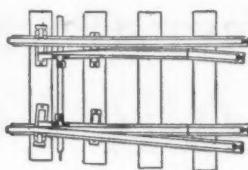
#### ROAD ROLLERS

2 Iroquois, 2½-ton Tandem, 1 Iroquois, 7-ton Tandem.  
4 Pioneer, 5-ton Tandem.

#### STEAM SHOVEL

1 Thew No. 0 Traction, ½ yd. dipper.  
**HENRY A. HITNER'S SONS CO.**  
4501 Richmond St., PHILADELPHIA, PA.

## Backing Up NOISE with FACT



SPLIT SWITCH

It has lately become a habit in advertising to yell "Service" on the slightest provocation.

*Representatives:*

The Herbert Crapster Co., Inc., 1 Madison Ave., New York City, N. Y.

T. H. Edelblute Co., 302 Wabash Bldg., Pittsburgh.

Mr. F. K. Holme-  
stead, Charleston,  
W. Va.

We wonder how many advertisers can back up their claims with facts? "CINCINNATI" can. Fourteen years of track equipment manufacturing, holding always to a high standard of quality, allows us to claim that we have rendered and do render real service.

*Our engineers are ready to help you.*

**The "Cincinnati" Frog & Switch Co.**  
Cincinnati, Ohio

Locomotives, Steam Shovels, Locomotive Cranes, Cars, New and Relaying Rail

### WE HAVE FOR SALE

40 Standard and 36" Gauge Modern Direct-connected Locomotives, in all types and weights from 8 to 75 tons.  
10 Standard and 36" Gauge Geared Locomotives all weights.  
15 Steam Shovels and Locomotive Cranes of different types and sizes.  
3000 tons Relaying Rails, all sizes, on our Birmingham yards.  
100 sets 35 and 40-lb. Frogs and Switches; good as new.

Birmingham Rail & Locomotive Co. BIRMINGHAM, ALA.

## RELAYING RAILS

5 miles 40 lb. section, North Carolina delivery  
3 miles 25 lb. section, North Carolina delivery  
8 miles 56 lb. section, South Carolina delivery  
8 miles 67 ½ lb. section, Georgia delivery  
All in first-class condition. Ready for prompt shipment. Also other weights. Write us for prices.

**H. M. FOSTER COMPANY**  
Continental Building, Baltimore, Md.

## SWEET'S TRACK MATERIALS

Our portable track is real economy equipment for all purposes, such as road construction, plantation work, etc., where track must be moved. One reason is the facility with which it can be handled, two men easily laying a half mile per day.

Our complete line includes Standard A. S. C. E. Rail Sections, 8 lbs. to 60 lbs. per yard; Plain Splice and Angle Bars, Bolts, Nuts, Spikes and Sweet's superior Steel Cross Ties with complete accessories.

Write for complete catalog.

**SWEET'S STEEL COMPANY—WILLIAMSPORT, PA.**

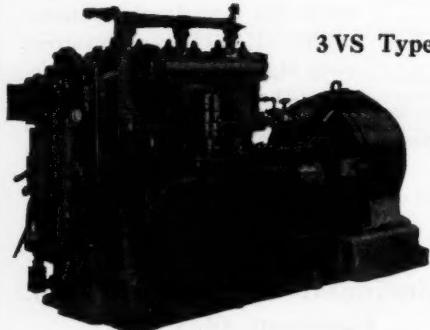
2900 SWEET STREET



# WESTINGHOUSE - NATIONAL AIR COMPRESSORS



*Self-contained!*



Another agreeable feature of Westinghouse-National Compressors: They are entirely self-contained, the compressor, motor, control system and all other necessary auxiliaries coming as one complete unit, ready for immediate operation. No fuss or worry running here and there to obtain a vital part which was not included.

Westinghouse-National Air Compressors are furnished in all sizes from 11 to 550 cu. ft. piston displacements: stationary and portable types: A.C. or D.C., motor. Especially adapted for factories, foundries, garages, office buildings, railway shops and yards, printing plants, etc. Literature on request.

**Westinghouse Traction Brake Company**  
General Offices and Works: Wilmerding, Pa.

OFFICES:

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Columbus, O.	St. Louis, Mo.	Washington
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## PORTER

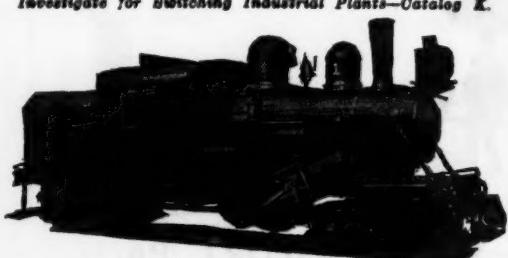
A favorite for every purpose  
for over a Half  
Century.



H. K. PORTER COMPANY  
Pittsburgh, Penna.

## LOCOMOTIVES

We are building Locomotives from  
12 to 90 Tons for all classes of service  
Investigate for Switching Industrial Plants—Catalog X.



CLIMAX MFG. CO. Corry, Pa., U. S. A.  
SOUTHERN AGENTS: Higgins & Wormington, New Orleans

## ALLIS-CHALMERS MFG. CO.

MILWAUKEE, WIS., U. S. A.

DESIGNERS AND BUILDERS OF

Steam Turbines, Electrical Machinery, Steam, Gas  
and Oil Engines, Centrifugal Pumps, Crushing  
& Cement Machinery, Etc.

Commending  
**BLUE BOOK OF SOUTHERN PROGRESS**

"The information found in this book is most beneficial. Could the contents be known to the business men of the South, it would have a far-reaching effect toward restoring the business confidence and bringing about prosperity again."

"Every man, woman and child in the United States should read the Blue Book of Southern Progress. I will admit that I really have learned more about the South from it than I have by living in the South forty years. Single Copies 50c.  
MANUFACTURERS RECORD Baltimore, Md.

MINSTER  
INDUSTRIAL  
LOCOMOTIVES



THERE IS  
A SIZE FOR  
YOUR PURPOSE

THE INDUSTRIAL EQUIPMENT COMPANY  
OHIO STREET, MINSTER, OHIO, U. S. A.  
EASTERN and EXPORT DEPT., THE HERBERT CRAPSTER CO., Inc.  
No. 1 Madison Avenue, NEW YORK CITY

Designed  
To Work



Write For Bulletins

Built To  
Overwork

Geo. D. Whitcomb Co., Rochelle, Ill., U.S.A.

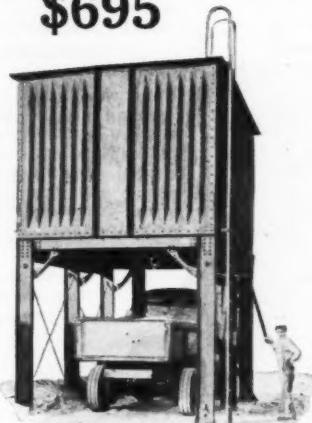
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MANUFACTURERS RECORD.

137

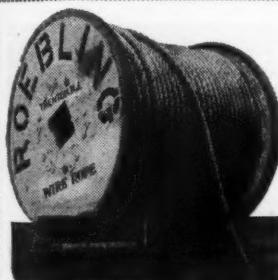
**STEEL BINS**

For Sand, Gravel, Cinders, Coal, etc.

**\$695**Capacity  
70 Cu. Yds.

The steel bins we illustrate herewith measure 10' x 12' x 15' and have a capacity of 70 cubic yards. Truck clearance is 10' as illustrated. These bins are particularly adapted for Road Contractors, Material Yards and Coal Yards. The photograph indicates what a great time and labor saver they are, as trucks can be loaded in a very short time and eliminates double handling. Their portability is an added feature as they are all bolted together in the field, no hot rivets being required. They are far superior to wood which soon decays. Price F. O. B. Chicago \$695.

**HARRIS BROTHERS CO.**  
1349 West 35th Street, Chicago, Ill.



### Wire Rope and Wire

*Used Successfully  
Since 1840*

**John A. Roebling's Sons Company**  
TRENTON, N. J.

## BRANCHES:

New York Boston Chicago Philadelphia Pittsburgh Cleveland  
Atlanta San Francisco Los Angeles Seattle Portland, Ore.

**The Columbus McKinnon Chain Company**  
Columbus, Ohio



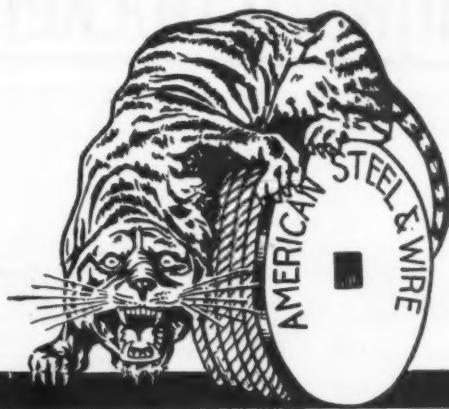
*Manufacturers of all kinds of Chain*  
Southern Offices:  
311 Wells Fargo Bldg., New Orleans, La.  
Box 158, Jacksonville, Fla. Southwestern Life Bldg., Dallas, Tex.



### AIR COMPRESSORS CENTRIFUGAL PUMPS

Literature on Request

Pennsylvania Pump & Compressor Company  
EASTON, PENNA.



# AMERICAN WIRE ROPE

*Send for Special  
Illustrated Catalogue*

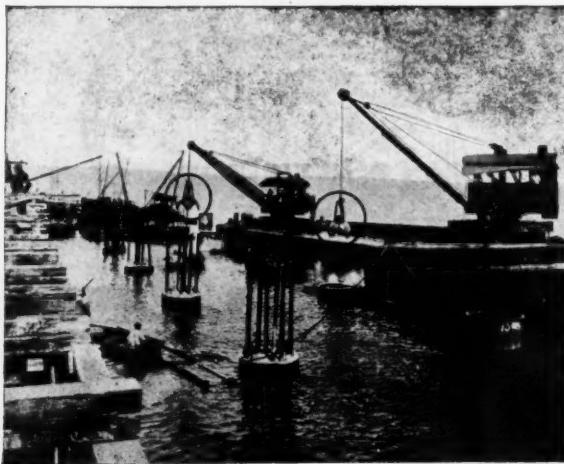
# AMERICAN STEEL & WIRE COMPANY

Complete stocks of Bright and Galvanized Ropes, Wire Strand and Electrical Wires carried at our Warehouses.

BALTIMORE, MD.

Sales Office and Warehouse:  
32 South Charles Street

# Hayward Buckets



## Down In Panama

Where else could bucket efficiency and durability be more important than on the gigantic Panama Canal job?

When it came to building the Atlantic Terminal piers Hayward Orange Peel Buckets were the choice for digging material out of caissons.

This is just one of many instances typifying the popularity of Hayward Buckets for jobs where there can be no doubt as to bucket efficiency and durability.

Hayward Buckets are built right—over forty years of bucket-building experience sees to that. Their fast, efficient work proves it. Rugged throughout. Replaceable steel shoes. All wearing surfaces protected by bearings and bushings that can be renewed right on the job. Interchangeable parts. Pressure lubrication for practically all types.

Catalog 43 describes Hayward Buckets of all types. It is replete with instructive photographs of Hayward Buckets on a wide variety of jobs. We'll gladly mail you a copy.

**THE HAYWARD COMPANY**  
50-52 Church Street, New York, N. Y.

Orange Peel  
Clam Shell



Drag Scraper  
Electric Motor

Trade HAYCO Mark  
PAT'D-Y

## Stroudsburg = Quality

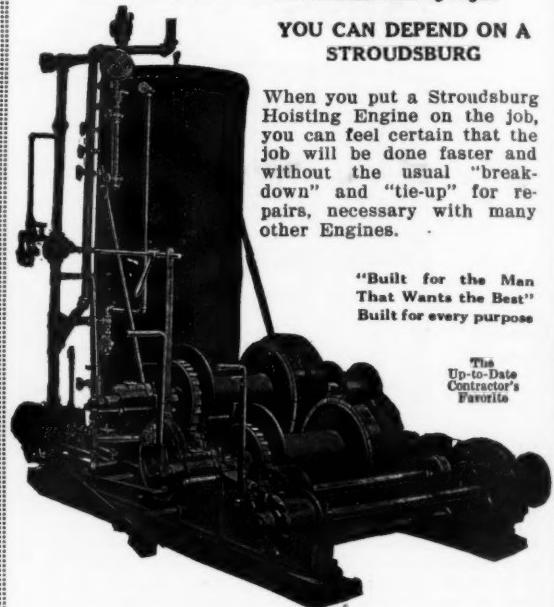
We Standardized the 125 Lbs. Pressure Hoisting Engine

### YOU CAN DEPEND ON A STROUDSBURG

When you put a Stroudsburg Hoisting Engine on the job, you can feel certain that the job will be done faster and without the usual "break-down" and "tie-up" for repairs, necessary with many other Engines.

"Built for the Man  
That Wants the Best"  
Built for every purpose

The  
Up-to-Date  
Contractor's  
Favorite



**STROUDSBURG ENGINE WORKS**  
Office and Works: No. 64 N. 3d St., Stroudsburg, Pa.

## LIDGERWOOD HOISTS

STEAM      ELECTRIC      GASOLINE

*For Every Type of  
Contracting Work*



**SPEED--STRENGTH--SAFETY**

are the qualities that distinguish

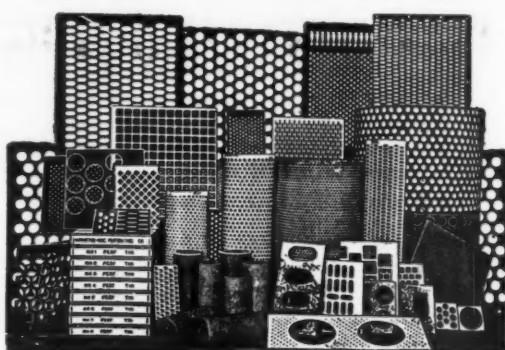
### LIDGERWOOD HOISTS

*Send for Catalogs*

**LIDGERWOOD MFG. CO.**

96 Liberty St., New York

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## PERFORATED METAL

All Sizes and Shapes of Holes

*In Any Kind of Metal*

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Cottonseed-Oil Mills

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BAY CITY MOTOR CRANE  
TRACTION WHEELS OR CRAWLER TRUCKS  
GASOLINE ENGINE OR ELECTRIC MOTOR  
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EXCAVATORS  
LAND DREDGES**  
Walking, Track, Crawler  
and Floating Type

**BAY CITY DREDGE WORKS**  
2600 Center Ave.  
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**A FLORY HOIST  
FOR EVERY PURPOSE**  
**S. FLORY MFG. CO., BANGOR, PA.**

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Monadnock Block, Chicago, Ill.  
Chas. T. Lehman, Birmingham, Ala.  
Farquhar Machinery Co., Jacksonville Fla.  
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Cotton Seed Oil Works a Specialty  
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**PERFORATED METAL SCREENS  
FOR ALL PURPOSES**

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**Turn Waste Minutes  
Into Money**

You can save time, labor and fuel on your derrick work by installing

**DAKE SWINGING GEARS**

One lever starts, stops and reverses it, and when the throttle is closed the brake is automatically applied to the drive.

The boom is always under perfect control, and the load may be quickly and accurately spotted.

Swinging the boom without the use of the main hoisting engine saves fuel.

Send for catalog and full particulars.

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**PERFORATED SCREEN PLATES AND SHEETS**

For Ores, Coal, Stone, Gravel, Cement, Sand, Clay, Cotton-Seed Oil Mills, Cotton Gins, Phosphate Mines, Fertilizer Plants, Cyanide Works, Chemical Works, Etc.

*Write for our New Catalogue*

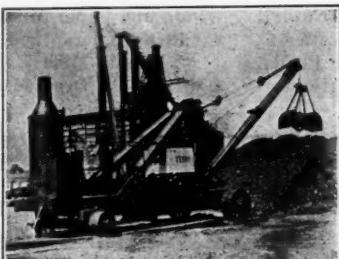
**CHARLES MUNDT & SONS**

490 Johnston Avenue

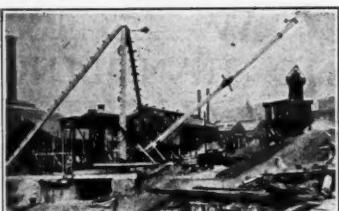
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**TERRY**

Builders of the highest type



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DERRICKS

**TERRY**

MANUFACTURING COMPANY  
Grand Central Terminal  
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Handling materials is one of your costs.  
Increase your profits by reducing your costs.  
with the installation of

**O. S. Dependable**

*Locomotive Cranes  
Clam Shell Buckets  
Orange Peel Buckets*

send for catalogues 18 &amp; 21.

**Orton & Steinbrenner Co.**

Offices: 608 So. Dearborn St., Chicago, Ill.  
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**NORTHWEST CRAWLER CRANE****All-Purposes****Goes Anywhere**

Can be used with clam shell buck-Equipped with perfected crawler et, dragline bucket, lifting magnet, mechanism; moves about the plant; or grappling hooks.

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Works: Green Bay, Wis.  
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"MINSTER"  
Gasoline Locomotives  
Industrial Track  
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Equipment  
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**P. W. WOOD****RAILWAY SUPPLIES****Industrial Equipment**

"BUDA"  
Motor, Hand & Push  
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Rail

822 PERDIDO ST.

NEW ORLEANS, LA.

**BEAVER EQUIPMENT****DERRICKS**

GUY—erectors and stationary (steel).  
STIFF-LEG—steel or wood construction.  
BARGE—A frame type—steel or wood.

**CRANES**

GASOLINE TRACTOR—designed for handling coal, sand, gravel, etc., at low cost—also general work.

TRAVELLING GANTRY types for large coal storage.

Penn Bridge Company, 101 Park Ave., New York  
Shops: Beaver Falls and Claysville, Pa.

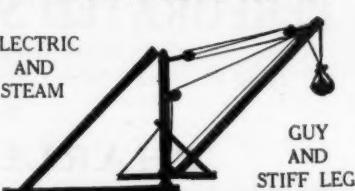
**BYERS****BYERS AUTO CRANE**

All steel construction. Any mounting. Any power.  
All standard attachments. 800 in use today proves  
Byers' popularity in the smaller crane field.

THE BYERS MACHINE COMPANY  
240 Sycamore Street, RAVENNA, OHIO

**M** TRADE MARK  
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ESTABLISHED 1869

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ELECTRIC  
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STEAM

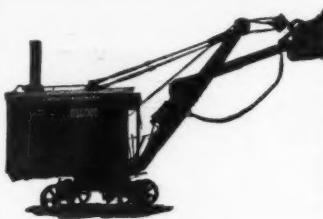


**D**  
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GUY  
AND  
STIFF LEG

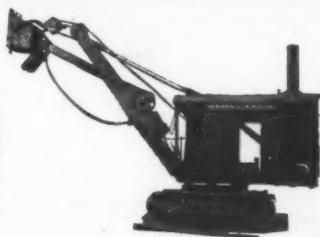
"Rugged—Durable Equipment"

J. S. MUNDY HOISTING ENGINE CO.  
Newark, N. J., U. S. A.



# OSGOOD

STEAM SHOVELS



## $\frac{3}{4}$ cu. yd. Revolving Steam Shovel Horizontal, Long Stroke Hoisting Engines

**5½" Bore, 7" Stroke**

When Boom Hoist is furnished it is mounted in an accessible, out of the way, position upon the engine beds.

Large diameter hoisting drum grooved for the hoist rope and bronze bushed with a single bushing extending full length of the drum.

Hoist gear of open-hearth, annealed, cast steel with cut teeth to which is secured the long stroke steam ram for operating the friction clutch.

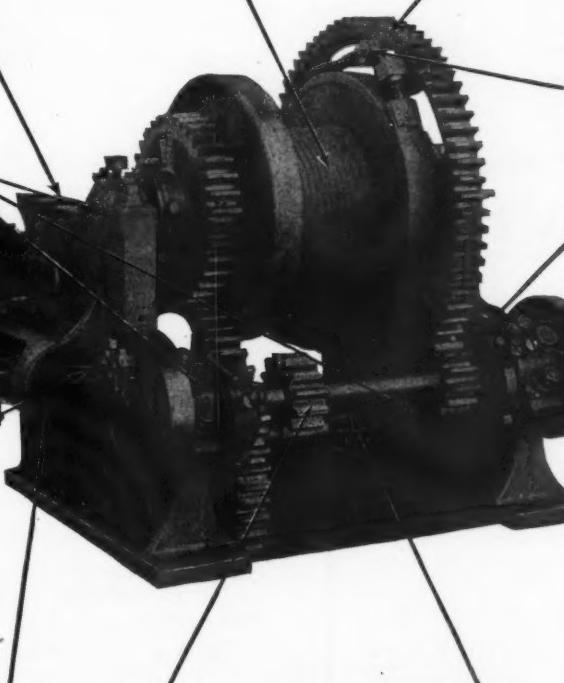
Bearings for shafts cast integral with engine beds and all bearing caps interchangeable.

Engine cylinders, valves and steam ram oiled by force feed oil pump.

Steel crossheads with adjustable shoes.

Manganese bronze connecting rods with wedge ends for quick and accurate adjustment.

Crosshead guides cast integral with engine beds accurately bored and aligned.



High speed pinion for doubling travel speed.

Cross propelling shaft mounted on and between beds and above deck

End fittings on friction bands designed for straight pulls with linings of both bands interchangeable.

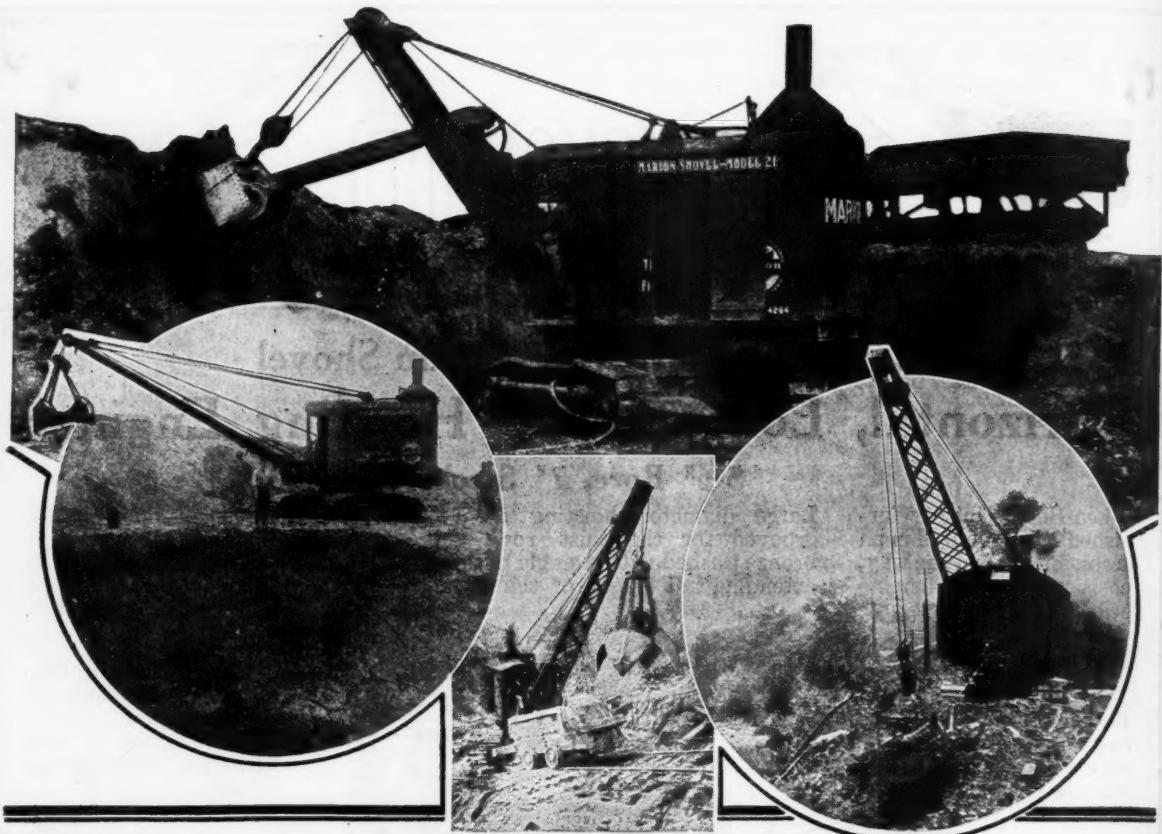
All spur gears and pinions are of steel with teeth cut from the solid.

Bearings provided with grease cups for good lubrication.

All machinery including the swinging engine bolted to main steel center casting.

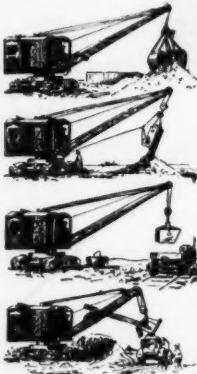
*Osgood Horizontal Hoisting Engines reduce wear and vibration and by using steam expansively save fuel and water.*

**The OSGOOD Company**  
**Marion, Ohio, U. S. A.**



## You may not need all these attachments now.

### Attachments for All Classes of Work



*As a Clamshell or Orangepeel Crane* for loading or unloading cars, loading from stock pile, etc., speedy, wide working range and easy to operate.

*As a Dragline* for stripping overburden, digging drainage canals, and miscellaneous work. Equipment is readily interchangeable with any other attachment.

*As a Material Handling Crane* for making repair of heavy machinery, handling rails, ties, cars, etc. A practical crane adapted to all kinds of work.

*As a Standard or High Lift Shovel* for loading into cars, trucks or wagons. Length of boom can be varied to suit working conditions. Rugged, powerful and speedy.

*But there is some satisfaction in knowing that all of them are interchangeable on the same machine.*

**I**N buying a shovel today you may need only the standard shovel equipment. A month from now or in six months or a year you may find you'll need clamshell, orangepeel or dragline fittings, or possibly high-lift equipment. Your shovel will quite likely be busy and you'll not want to shut it down long to make the change. It's then

*You'll Appreciate It's a Marion.*

If there is any one thing we watch above all else it is to see that like parts are interchangeable and that attachments can be easily installed in the field.

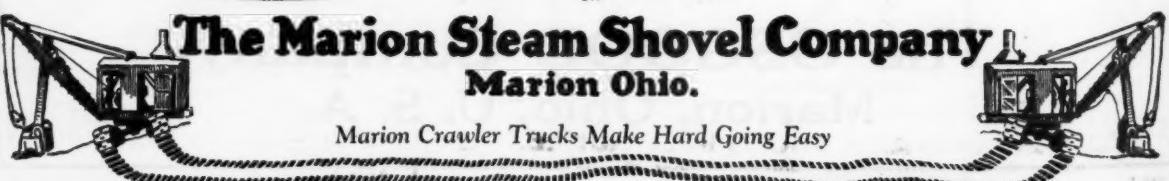
The time lost in changing from one type of machine to another is almost negligible. And the fine thing about it is that the shovel works equally well regardless of the equipment used. This is provided for in a well balanced design, ample reserve power, scientific selection of materials and close attention to construction details.

Tell us what work you have and we will recommend the machine and attachments best suited.

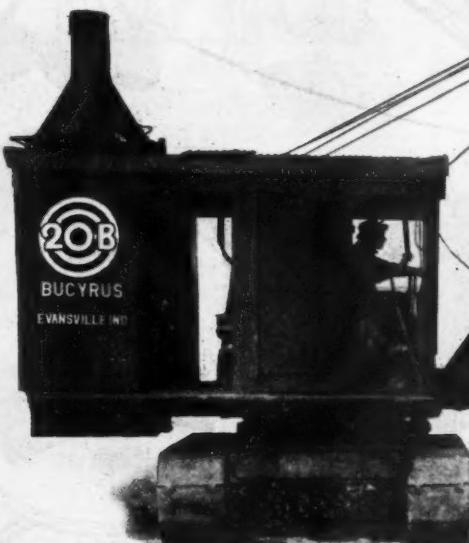
247

## The Marion Steam Shovel Company Marion Ohio.

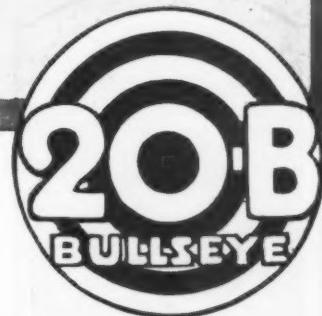
Marion Crawler Trucks Make Hard Going Easy



# This Shovel is Easier to Operate



A  
New  
**3/4-Yard  
Shovel**  
**THE BUCYRUS  
20-B-BULLSEYE**



**From Boom Point to Ash Pan this New  
20-ton Shovel is Easier to Operate  
and Easier to Maintain —**

#### A SIMPLIFIED LEVER CONTROL

Three levers for digging motions with throttle and ram controlled independently by one lever. This allows you to propel without shutting steam off main ram. A foot brake that works as easily as an automobile brake. A release throttle that allows you to lower the dipper without the brake. This is the simplest control on any small revolving shovel.

#### TWO SPEEDS WITH ONE LEVER

The 20-B is equipped with high and low propelling speeds. The shift is made with one lever.

#### MORE ACCESSIBLE

The Bucyrus 20-B is designed and built with the convenience of the operator uppermost. For example: The swing rollers may be taken out without jacking up the frame; the vertical propelling shaft is removable from the top instead of from the bottom; all parts of caterpillars easy of access. Clear passage between boiler and machinery gives more room for fireman.

#### PATENT STACK LOWERING DEVICE

Another aid to the convenience of the operator. The shovel is equipped with a simple device by which the stack may be lowered by power; this is a big time and labor saver, and prevents smashing in stack and rear of cab.

#### EASIER DUMPING DIPPER

Any shovel man knows what this means when he is digging sticky clay. The 20-B dipper has all four corners rounded on inside. The teeth are on the outside, leaving the inside unobstructed.

#### SIMPLIFIED CATERPILLARS

Less than half as many parts as the next simplest type built. Bearings of rollers high out of mud; no gaps between links to catch rocks and act as jaw crushers, a smooth continuous platform.

#### UNIVERSAL MACHINE

May be equipped with long booms and dipper handles for high lifts; special dippers and handles for sewer work; dragline boom and bucket; clamshell or crane equipment, etc.

# BUCYRUS

Established in 1880

A Special Plant Devoted Exclusively to Small Revolving Shovels

Railroad Type and Revolving Shovels of All Sizes, Dragline Excavators, Trench Excavators, Dippers, Hydraulic and Placer Dredges, Spreader Plows, Wrecking Cranes, Etc.

**BUCYRUS COMPANY, SOUTH MILWAUKEE, WIS.**  
NEW YORK CHICAGO BIRMINGHAM SAN FRANCISCO PORTLAND DENVER

434

Clip this Coupon and Mail to Nearest Office

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Date \_\_\_\_\_

**BU CYRUS COMPANY:**

Please mail me your Bulletin C-201, describing your 20-B UNIVERSAL SHOVEL.

Name \_\_\_\_\_

Address \_\_\_\_\_

# BROWNING



## Engineered to Scores of Uses!

A Browning is more than a locomotive crane—the easy attachment of pile driver leads gives you an economical and complete pile driving machine—the steam shovel attachment permits excavations with an unusual amount of lift—and so on down the list of uses.

Engineered to each job yet without compromise or sacrifice of efficiency on any one, the Browning with Bucket or Magnet, Grapple or Drag Line will handle any material at a minimum unit cost and in addition will switch your cars.

Why pay the overhead on more than one machine when you can keep a Browning busy every minute on necessary work. Write for catalog showing Browning cranes in action on operations similar to your own.

**THE BROWNING COMPANY**  
CLEVELAND, OHIO



Browning Locomotive Crane  
Equipped with Pile-Driver Attachment.

Browning Locomotive Crane with  
Steam Shovel Equipment.

### Branch Offices:

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## LOCOMOTIVE CRANES AND BUCKETS

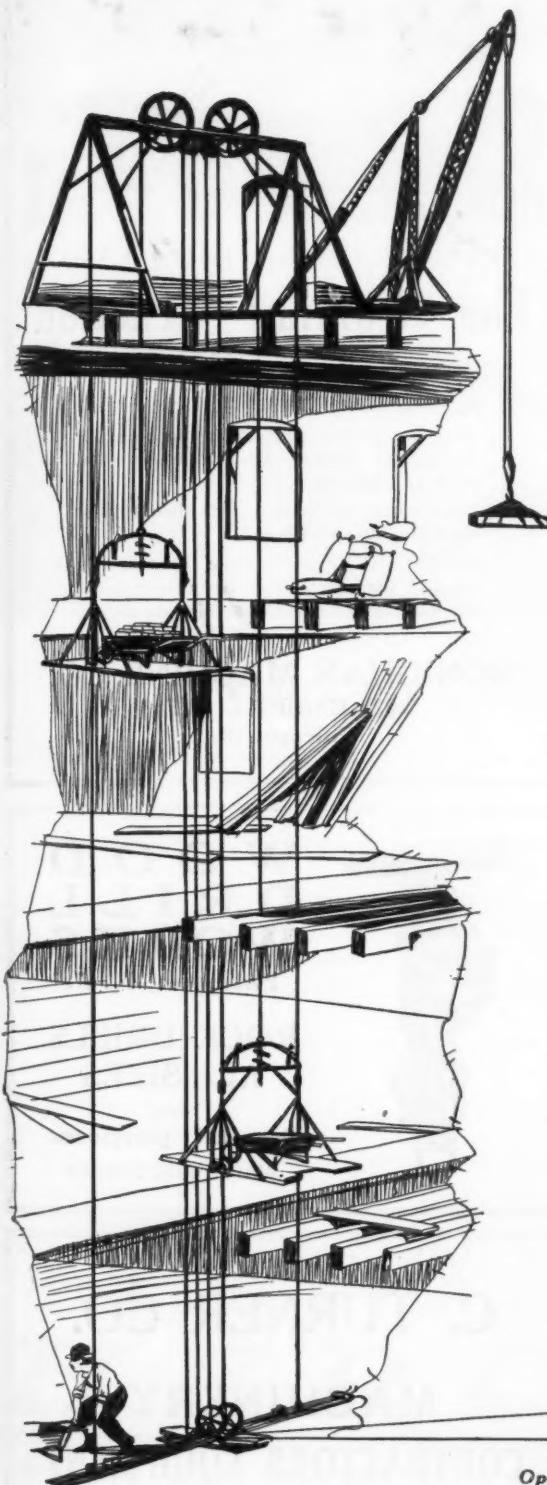
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August 3, 1922.

MANUFACTURERS RECORD.

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## Drive Your Building Elevators With P & H Elevator Hoists



*Operates the Elevator  
and Derrick*

The standard P & H Gasoline Contractors' Hoist equipped with elevator sheave in place of the Nigger Head on the first drum, and an additional disc clutch on the motor shaft for reversing, gives you a high grade, powerful driving machine for double elevator work.

### Two Functions at Same Time

Only the elevator sheave is used for the elevator work, the drum or drums of the hoist proper being available for other work. There is no interference between the two functions, since the elevator sheave is operated through a jaw clutch independent of the drum clutches.

### P & H Design and Construction Mean Lower Operating Cost and Dependability

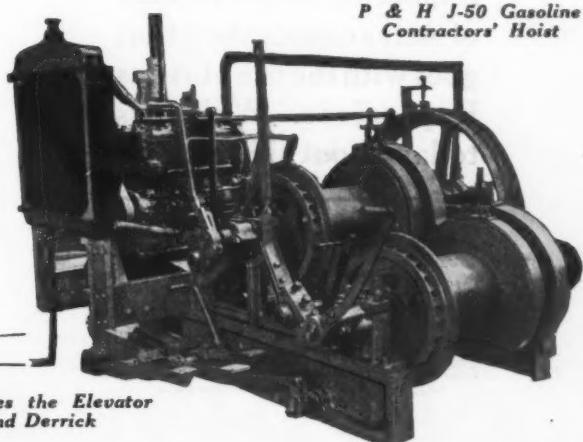
The same thorough designing and manufacturing methods that are employed in the production of P & H Traveling Cranes, Hoists, Machine Tools, Excavators, and Gas Shovels, assure steady service and low maintenance costs. If you are interested in lowering your costs of operating your construction elevators and derricks,—you'll investigate P & H Gas Driven Contractors' Hoists. They are ready to operate at the twist of the motor crank, and are absolutely dependable.

*Hoist and Derrick Department*  
**PAWLING & HARNISCHFEGER CO.**  
*Established in 1884*

3827 National Ave., Milwaukee, Wis.

New Orleans	Chicago	St. Louis	Birmingham
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*P & H J-50 Gasoline  
Contractors' Hoist*



# GASOLINE HOISTS

**ATLAS EXPLOSIVES**  
USED ON BIG JOBS EVERYWHERE



If Atlas chemists think it worth while to make "A Proper Explosive for Every Blasting Requirement," then it is good business for any one using explosives to make sure he is employing the ONE grade that is best suited to the work. To help you in selecting the RIGHT grade for your requirements is a feature of Atlas coöperation that goes with the use of Atlas Explosives. Write us today about this service.

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ATLAS POWDER COMPANY  
WILMINGTON, DEL.

*Branch Offices:* — Allentown, Pa.; Birmingham, Ala.; Boston; Chicago; Houghton, Mich.; Joplin, Mo.; Kansas City; Knoxville; McAlester, Okla.; Mexico City, Mexico; New Orleans; New York; Philadelphia; Pittsburg, Kans.; Pittsburgh, Pa.; Pottsville, Pa.; St. Louis; Wilkes-Barre.



2-3 yard Walking Draglines on Levee Work in Texas

## The Walking Traction

A feature exclusive to Monighan Excavators which the contractor must see in action but once to appreciate.

Over any ground—soft, muddy or rough, it "walks" the excavator without planks, skids, track or trackmen.

Labor cost is cut, more material handled and the whole job speeded up.

Catalog No. 17 explains these advantages in detail. With it we will send you the name of the user nearest you if you wish it.

**MONIGHAN MACHINE CO.**  
2024 CARROLL AVE.  
Chicago, Ill.



**WOOD DRILL WORKS**  
Paterson, N. J.  
  
**ROCK DRILLS**  
**ALL SIZES**  
and  
for all purposes  
WRITE FOR PRICES

**C. TURNER CO.**  
  
**MACHINERY**  
**CONTRACTORS EQUIPMENT**

JAMES BUILDING  
CHATTANOOGA, TENNESSEE



## The Ancient Quarries of Ptolemais

Like a gigantic staircase, the mountain of Gebel-Toukh slopes back from the waters of the Nile. Here, in the 4th century, B.C., Egyptians quarried stone for the streets and buildings of Ptolemais. One can still distinguish the grooves made by the tools of the workmen, and the instructions inscribed on the rock by the foremen.

When it became too costly to remove the overburden, subterranean quarries were started. The workman, on his raised platform, wielding a pointed tool, had no easy task in making the first cut for the roof in his system of "right-stepping".

Production at these quarries was insignificant compared with the enormous daily tonnages made possible by modern machinery and explosives. But conditions today which demand such large production also necessitate the prevention of waste in time,

labor and materials. Now, even dynamite, one of man's greatest labor savers, must be scientifically selected.

On work for which it is suited, Hercules Special No. 1 reduces blasting costs. It contains about 35 percent more cartridges per box than 40 percent dynamite which it frequently replaces, cartridge for cartridge. For several years we have pointed out the economy of Hercules Special No. 1. It contains nothing but the highest grade of standard materials and by wide use at many quarries and mines has proved its dependability.

Our new book, "Eliminating Waste in Blasting", was written to assist you in reducing blasting costs. Write to our Advertising Department, 947 King St., Wilmington, Del., for a free copy.

**HERCULES**  
POWDER COMPANY



Allentown, Pa.  
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**SAND**

Bank Building Concrete Paving

**WASHED GRAVEL**

In Car, Scow and Barge Lots

**THE ARUNDEL CORPORATION**

BALTIMORE, MD.

Office: PIER 2 PRATT STREET

Wharves: PIER 2 PRATT ST., AND FOOT OF FELL ST.

**Asphalt Filler  
Asphaltic Roadway Gravel  
Roofing Gravel**



**AMERICAN LIMESTONE COMPANY**  
McNutt Building  
KNOXVILLE, TENNESSEE

**SAND AND GRAVEL****Petersburg Sand & Gravel Corporation**  
Petersburg, Virginia**CONCRETE, BUILDING AND PAVING SANDS**  
Giant Portland Cement  
Clean Washed Gravel in all sizes**SAND—GRAVEL—BRICK**Washed Sand for Concrete, Roads and  
Buildings, Brick and Plastering  
Washed Gravel All Sizes  
Building BrickShipments: Sand and Gravel from Petersburg, Va.  
Brick from Waverly, Va.

FRIEND &amp; CO. Inc. - River Street, Petersburg, Va.

**CRUSHED LIMESTONE**  
**Best for All Purposes**We manufacture all sizes of stone suitable for all  
classes of road building and concrete work where only  
a high-grade limestone is required.

Quarries opened up in 1912.

Capacity 4000 tons daily

**Quarries:**

Blue Ridge, Va. Pembroke, Va. Pounding Mill, Va.

**W. W. BOXLEY & COMPANY**

First National Bank Building, - ROANOKE, VA.

When a certain engineer wanted facts about  
pavement performance and costs**He asked the men who know**And from all parts of the country came replies  
which were astonishing in their warm com-  
mendation of**Warrenite-Bitulithic Pavement**Those replies have been collected in an illumi-  
nating pamphlet which we will be glad to send  
to those interested in BETTER pavement jobs  
for their communities.

Ask for booklet C-823

**WARREN BROTHERS COMPANY****EXECUTIVE OFFICES:  
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Richmond, Va.

August 3, 1922.

MANUFACTURERS RECORD.

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# TEXAS



**Texaco Sheet Asphalt on Beaumont-Port Arthur Road, Texas.  
Photo taken after five years' service—no maintenance.**

Interest in the Lone Star State centers about its importance in the petroleum industry;—its vast area which is greater than the combined area of the Atlantic Coast States from Maine to Virginia;—its great railroad system which represents a mileage exceeding that of any other State;—its extensive agricultural lands;—and possibly the tremendous scale on which ranching and grazing is carried on in the State.

# AND



**Texaco Asphaltic Concrete on St. Francis Road, Potter County, Texas—three miles. (Potter County has let contract for another twenty.)**

There is another thing about Texas, however, which is of extraordinary interest to those in the road building field.

It is this: In the production of asphalt, Texas ranks first among the States of the Union. The largest asphalt refinery in the world, owned and operated by The Texas Company, is located at Port Neches, Texas.

Texas, of course, has incorporated in its State Highway System thousands of square yards of **TEXACO ASPHALT** pavements.

# TEXACO



**The Texas Company**  
Asphalt Sales Dept., 17 Battery Pl., New York City



New York  
Philadelphia

Richmond  
Boston

Jacksonville  
Atlanta

New Orleans  
Memphis

Chicago  
Cleveland

Oklahoma City  
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Dallas

# COPPER FURNACE SLAG

**COARSE AGGREGATE & SCREENINGS:—A HARD MATERIAL  
FREE OF DUST—WILL STAND UP UNDER GREAT WEAR**

**SLAG SAND:—AN ABSOLUTELY CLEAN “ALL-SAND” MATERIAL**

IRON 37%

**PROMPT SHIPMENTS**

SILICA 34%

**REASONABLE PRICES**

**FOR:—**

CONCRETE  
ROAD BUILDING  
RAILROAD BALLAST  
CEMENT GUN WORK  
SAND BLASTING  
ETC.

**TENNESSEE COPPER COMPANY**  
SALES OFFICE AND PLANT  
COPPERHILL TENNESSEE

## National Cement Company

*Manufacturers of*

### High Grade Portland Cement



**QUALITY and  
SERVICE**  
**Our Motto**

*Sales Department*  
Empire Building - Birmingham, Ala.  
Plant  
Ragland - - Alabama

## Southern States Portland Cement



We produce only one grade

**THE HIGHEST  
ALWAYS UNIFORM**

**Southern States Portland Cement Co.**

Office and Mills—ROCKMART, GA.

## PAVING A RIVER BOTTOM WITH CONCRETE

That is what Government engineers are doing to prevent the cantankerous Mississippi from washing away its own bottom.

Large reinforced concrete mats are laid upon the river bottom to prevent silt movement by erosion.

### “WARRIOR”

**PORLAND CEMENT**  
is being used

**GULF STATES PORTLAND CEMENT CO.**

Plant and Sales Office  
DEMOPOLIS, ALA.



## MR. TAX-PAYER—YOU!

Do you want your county to spend YOUR good money on roads that will wear out before your bonded indebtedness is liquidated?

I SAY YOU DON'T.

What you want is a hard-surfaced road, with little cost for maintenance—a road that can be traveled in rain or snow, summer and winter. You want a PERMANENT road—that means CONCRETE!

*Write for Literature—It's Free*

**DIXIE PORTLAND CEMENT CO.**  
CHATTANOOGA, TENN.

*"Concrete for Permanence"*

# Bridges of Concrete

For substantial construction, for permanency, for minimum maintenance and for attractive appearance, build your bridges of concrete and you build a sound investment into them. Moore's Bridge illustrated below was built of concrete for Bryan & Evans Counties, Georgia, under Federal Aid Project Number 52. Connerat-Quist Contracting Company, of Savannah, New York and Galveston were the contractors. Clinchfield Portland cement was used exclusively in building this splendid bridge, just as it is being selected for so many of the fine structures being erected for permanence in all parts of the South.

*When you plan to build,  
specify concrete. When  
you buy cement, select  
Clinchfield.*

**Clinchfield Portland Cement Corp.**  
Office and Mills - Kingsport, Tenn.





## Cortez at the Causeway to Tenochtitlan

Fed with dreams of golden conquest, Cortez led his Spanish veterans thru the heart of Mexico to the Aztec capitol, Tenochtitlan. From the top of the mountains the weary adventurers beheld this pearl of the West, rising out of the waters of an azure lake, and approached by a giant causeway. Here they would find triumph, conquest, gold, jewels of rare value. . . . Alas! they were to find strife and bloodshed. Along this same perfect road and yonder causeway which they viewed peacefully now, they would before long flee in disorder, overwhelmed on every side, a mere remnant winning thru to a disastrous escape from the goal of their greedy desires!

\* \* \*

The Aztec rulers knew the value of good roads, which extended everywhere thru-out their kingdom. Along them thronged merchants, slaves, soldiers, princes—and foes!

Roads are just as vital today, but now they are built more easily, more quickly. Sir Fabric lends his strength of welded steel to concrete, the perfect modern road material.



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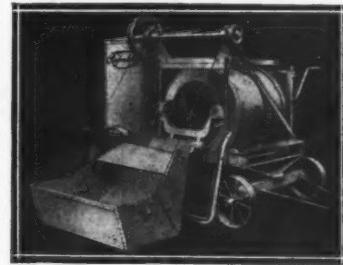
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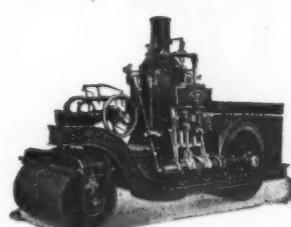
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Steam  
Rollers  
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**STRENGTH**  
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ERIE, PENNA., U. S. A.

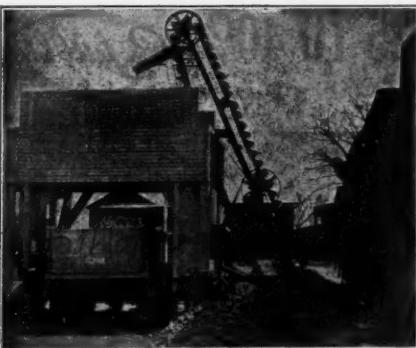
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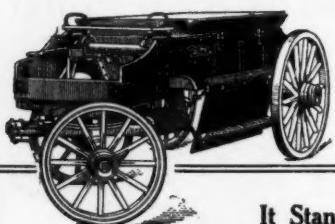
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Reliance Road Building-Labor Saving Equipment



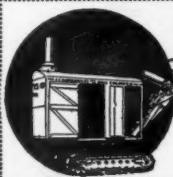
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#### It Stands Unequalled

for strength, durability and ease of operation.  
It dumps clear and clean.  
Hinges are not malleable or cast iron, but are made  
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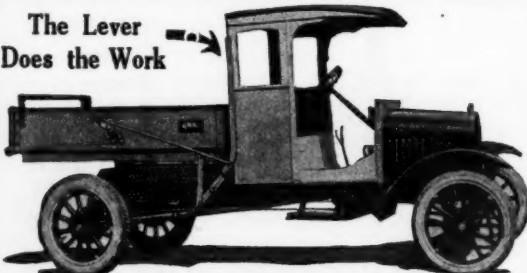
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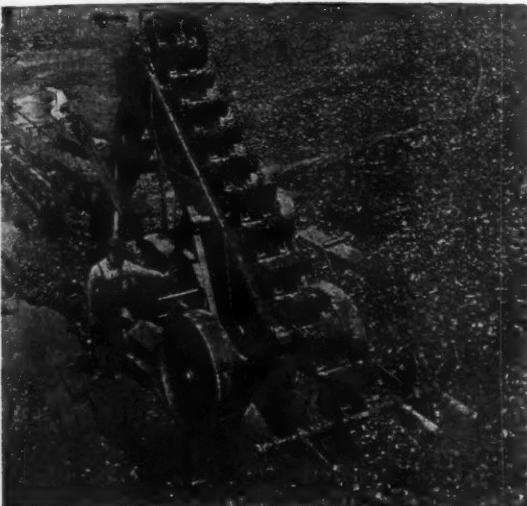
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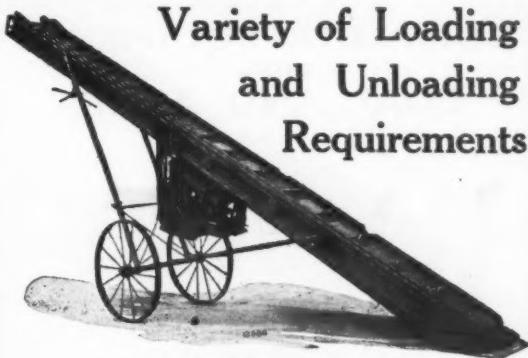
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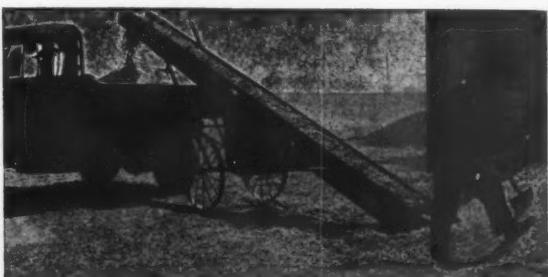
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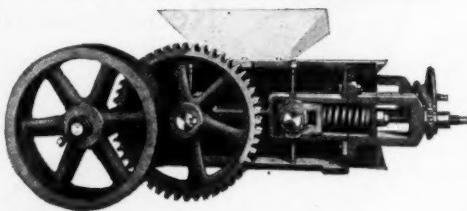
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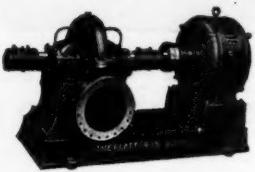
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TAYLOR'S SPIRAL RIVETED PIPE is furnished with FORGED STEEL FLANGES attached. These flanges expand evenly with the pipe, and cannot be broken by any possible condition that may arise in the piping system.

SHEET STEEL FITTINGS are made to your special designs to meet the most unusual conditions, eliminating heavy castings, and making the piping system wrought steel throughout.

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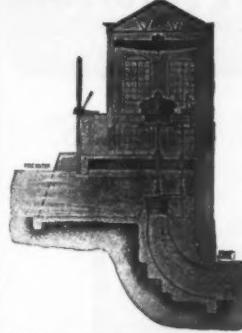
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We have a Very Efficient System of  
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 WELL DRILLS  
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Keystone Well Drills are dependable  
 tools for Water, Oil and Gas Wells,  
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 depths, 25 to 3000 ft.—Steam, Gas  
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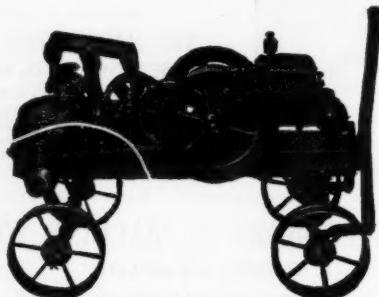
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 are offered for Heavy, Continuous  
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 and Gas, Smoke Models and  
 may be Steam Driven, Belted,  
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 Smaller Pumps for lighter ser-  
 vice.  
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"100 PER CENT. RESULTS"



One user of the Humdinger Diaphragm Force Pump recently stated that he was getting 100% results from it and if having nary a complaint means anything, that is true with every Humdinger Diaphragm Force Pump user. You certainly want to know more about a pump that gives 100% results, that pumps water fifty feet above its former level and that does not splash. We will be very glad to send those further facts on the Humdinger and on any other pumping equipment you may require.

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SAND PUMPS	AIR PUMPS
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Fig. 267  
SINGLE SUCTION WATER PUMP

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Fig. 289  
ENGINE DRIVEN CONTRACTORS PUMP

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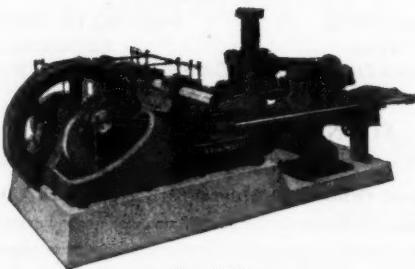


Fig. 1259  
5½ x 18" Duplex

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These power pumps are made in both Duplex, and Triple with plungers 5½", 6", 6½", 7", 7½", 8", 8½", and 9" in diameter, and with a stroke of either 18", 24", or 36". Cast Steel fluid ends are good for 900 lbs. working pressure; Cast Iron 400 lbs.

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Any capacity from 200 to 5,000 gallons per minute against any head or pressure.

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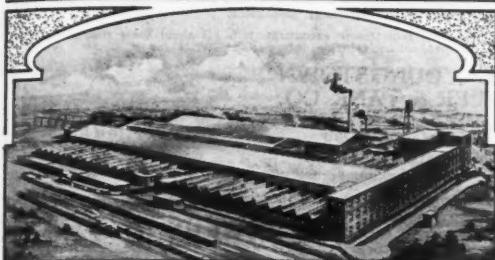
August 3, 1922.

MANUFACTURERS RECORD.

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## THE SHOPS BEHIND DE LAVAL PUMPS, STEAM TURBINES, CENTRIFUGAL BLOWERS AND SPEED REDUCING GEARS



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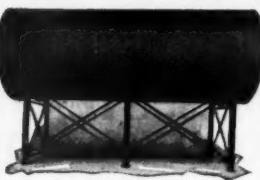
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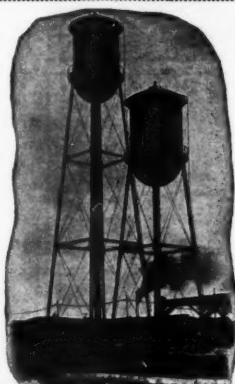
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**ESTABLISHED 1892**  
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Baltimore



Maryland

# Completing New Drainage District on Florida East Coast

## NEW LANDS BEING PLACED ON THE MARKET

The Model Land Company has about 100,000 acres of land in Palm Beach County, Florida, of which 30,000 acres lie between West Palm Beach and Deerfield, along the line of the Florida East Coast Railway. Between these points are the towns of Lake Worth, Lantana, Boynton, Delray and Boca Raton—all prosperous, busy little places, and most of them engaged in trucking and fruit growing.

In this territory is the Lake Worth Drainage District, comprising about 130,000 acres of land lying just west of the railroad, and construction work on this district is now about completed.

This drainage district is one of the most thoroughly designed of any that has ever been organized in the South. Both drainage and sub-irrigation canals have been built, which provide for draining the lands in wet weather and irrigating them in dry periods.

These lands are splendidly adapted to dairying. There are at present markets for more dairy products than are produced in this territory. Whole milk and cream being shipped in by rail for several hundred miles. The population in this locality is increasing very fast. There has just been organized a Creamery Company that is intending to have buildings erected at once.

This drainage district is in the only tick free part of Florida at present. Enabling the dairyman to bring the best of cattle from any place without any loss from this trouble.

The soil is of such a type, with the drainage and irrigation, that large yields of forage and other crops can be produced. The grazing crops will give unusually good results as well as carry several cows per acre. Thus the dairyman in this district can produce his milk cheap and has a ready market at a good price.

Splendid transportation facilities are available, as the lands lie close to the Florida East Coast Railway and a number of lateral highways penetrate the property.

These lands are being placed on the market and are being offered in tracts of not less than 40 acres, either for cash or on easy terms at 6%.

*Further information regarding the opportunities offered in this new area and at other East Coast points, will be gladly furnished.*

**MODEL LAND COMPANY**  
OF THE FLAGLER SYSTEM

JAMES E. INGRAHAM, President

ST. AUGUSTINE, FLA.

# SPLENDID RESULTS FROM TESTS ON GEORGIA REFRACTORY CLAYS

For over a year exhaustive research work has been carried on by the Central of Georgia Railway in co-operation with U. S. Bureau of Mines to determine the quality and possibilities of Georgia Refractory Clays. A number of tests of these clays have been made by the Ceramic Station at Columbus, Ohio, to determine the adaptability of these clays for making various refractory products. Those covering refractory brick made from Georgia clays have just been completed, and the final tests show the following splendid results:

- 1—Exceptional resistance to heat changes.
- 2—The capability of withstanding an extreme load at high temperature.
- 3—A high fusion point.
- 4—Sufficient density to minimize gaseous conditions.

These qualities class these brick as superior to the highest grade of fire brick made anywhere.

The brick under test were made from one type of clay occurring in large quantities along the lines of the Central of Georgia Railway. This is a decided advantage over existing plants, which have to assemble their raw materials from several different sources.

Vast deposits of these clays are available, and as they lie close to the surface they carry very little overburden and can be mined with steam shovels.

Ample transportation facilities are available for reaching the country's important markets for high grade fire brick.

Further and complete reports of the laboratory and plant tests being made on Georgia Refractory Clays will be available in a few months.

In the meantime, any preliminary information wanted will be gladly furnished to reliable parties desiring to investigate the opportunities offered for the establishment of refractory clay plants to utilize these resources.

**J. M. MALLORY, General Industrial Agent**

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**Savannah, Georgia**

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- TELEPHONE SYSTEMS.**  
(Automatic Interior and Local).  
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- TERRA-COTTA. (Ornamental.)**  
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- THRESHERS.**  
Cardwell Machine Co., Richmond, Va.
- TILE.**  
**Drain.**  
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**Structural.**  
Kingsport Brick Corp., Kingsport, Tenn.  
Gonee Br. & Tile Co., Milledgeville, Ga.  
West Va. Fire Clay Mfg. Co., Pittsburgh,  
Floor, Wall, Mantel, Etc.  
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Gonee Br. & Tile Co., Milledgeville, Ga.  
Southern Mosaic Tile Co., Atlanta, Ga.
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Eco Clock Co., Boston, Mass.  
Newman Clock Co., New York, N. Y.
- TIN AND TERNE PLATES.**  
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- TIN PLATE POLISHING MACHINERY.**  
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- TIRES.**  
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- TOBACCO MACHINERY.**  
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- Machinist.**  
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Pratt & Whitney Co., New York.  
Universal Machine Co., Baltimore, Md.  
Western Tool & Mfg. Co., Springfield, O.
- Mechanical.**  
Starrett Co., L. S., Athol, Mass.
- Pneumatic.**  
Independent Pneumatic Tool Co., Chicago.  
Ingersoll-Band Co., New York, N. Y.
- FOOLHOLDERS.**  
Western Tool & Mfg. Co., Springfield, O.
- TOWERS.**  
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Bridge Co., New York, N. Y.  
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Eiter-Conley Co., Pittsburgh, Pa.
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Eiter-Conley Co., Pittsburgh, Pa.
- Steel and Wood.**  
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Ole Mfg. Co., R. D., Newman, Ga.  
Pittsburgh-Des Moines St. Co., Pittsburgh.  
Walsh & Weidner Boiler Co., Chattanooga.
- TRACK SPIKES.**  
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J. T. Tractor Co., Cleveland, O.
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**Wire Rope.**  
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- TRANSFORMERS.**  
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General Electric Co., Schenectady, N. Y.  
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- TRANSMISSION BEARINGS AND HANGERS.**  
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Wood's Sons Co., T. B., Chambersburg, Pa.
- TRENCH MACHINERY.**  
Austin McHry. Corp., Chicago, Ill.  
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- TRIM. (Metal.)**  
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**Drykin.**  
Moore Dry Kiln Co., Jacksonville, Fla.  
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Mueller Metal Co., Fort Huron, Mich.  
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National Tube Co., Pittsburgh, Pa.
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Smith Co., S. Morgan, York, Pa.  
**Steam.**  
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De Laval Steam Turbine Co., Trenton, N. J.  
General Electric Co., Schenectady, N. Y.  
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Holtzai Steel Form & Iron Co., Warren, Ohio.
- VALVES.**  
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Friedl Co., Waynesboro, Pa.  
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Powell Co., The William, Cincinnati, O.  
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Morgan Construction Co., Worcester, Mass.  
**Gate.**  
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- VARNISH.**  
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- VEE-EN CUTTING MACHINES.**
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Buckeye Power Co., Columbus, O.  
Buffalo Forge Co., Buffalo, N. Y.  
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Bailey-Lobby Co., Charleston, S. C.  
Sand and Gravel.  
Bonney Supply Co., Inc., Rochester, N. Y.  
Link-Belt Co., Philadelphia, Pa.
- WATCHMAN'S PORTABLE CLOCKS.**  
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Ecc Clock Co., Boston, Mass.  
Newman Clock Co., New York, N. Y.
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Sonnenborn Sons, Inc., L. New York.  
Texas Co., The, New York, N. Y.  
Truscon Laboratories, The, Detroit, Mich.
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- WATER PURIFICATION.**  
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Roberts Filter Mfg. Co., Darby, Pa.  
Scalfi & Sons Co., Wm. B., Pittsburgh.
- WATER-SOFTENING APPARATUS. (Purifying.)**  
American Water Softener Co., Phila.  
Dodge Sales & Engg. Co., Mishawaka, Ind.  
International Filter Co., Chicago, Ill.  
New York Continental Jewell Filtration Co., The, Nutley, N. J.  
Scalfi & Sons Co., Wm. B., Pittsburgh.  
Wayne Tank & Pump Co., Ft. Wayne, Ind.
- WATER SUPPLY INSTALLATIONS.**  
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- WATER WELL SCREENS.**  
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- WATER-WORKS SUPPLIES AND APPLIANCES.**  
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Bourbon Copper & Brass Works Co., Cincinnati, O.  
Coldwell-Wilcox Co., Newburgh, N. Y.  
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Michigan Pipe Co., Bay City, Mich.  
Standard Wood Pipe Co., Williamsport, Pa.  
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General Electric Co., Schenectady, N. Y.  
Kentucky Oxygen-Hydrogen Co., Louisville, Ky.
- WELL CONTRACTORS. (Oil, Artesian, etc.)**  
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Hughes Specialty Well Drilling Co.,  
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Synder Pump & Well Co., Richmond, Va.  
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McEvoy & Co., J. H., Houston, Texas.
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- WHARFBOATS. (Steel.)**  
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- WHEELS AND AXLES.**  
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- WHEEL PRESSES.**  
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- WINCHES.**  
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- WINDLASSES.**  
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- WINDOW GUARDS.**  
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- WIRE.**  
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- Barbed Wire, Etc.**  
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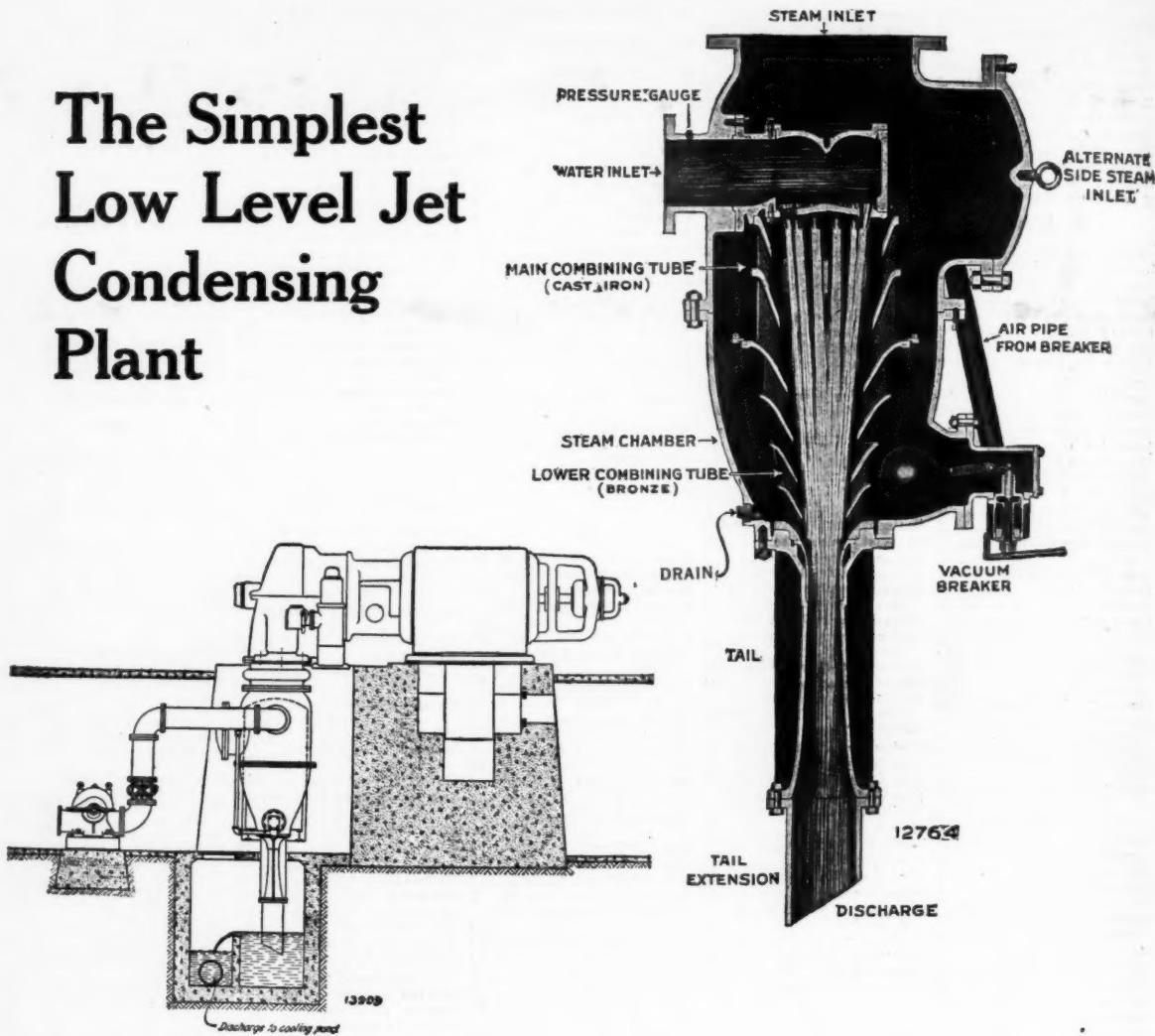
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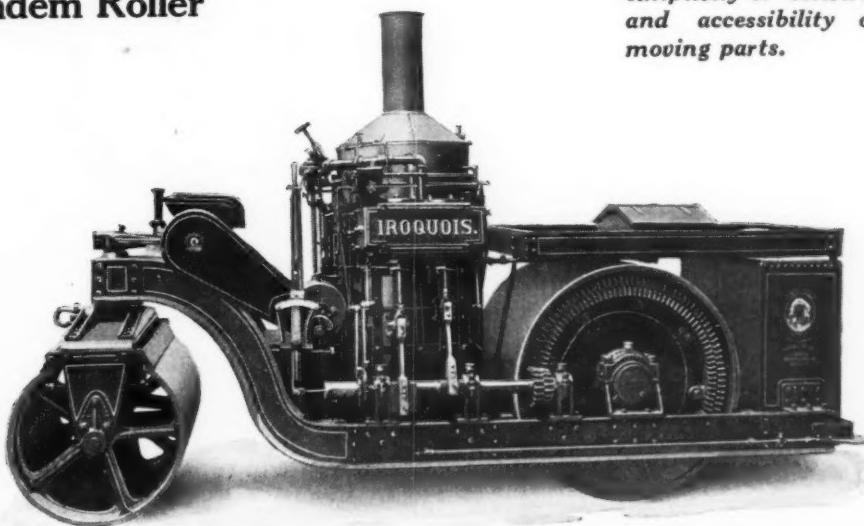
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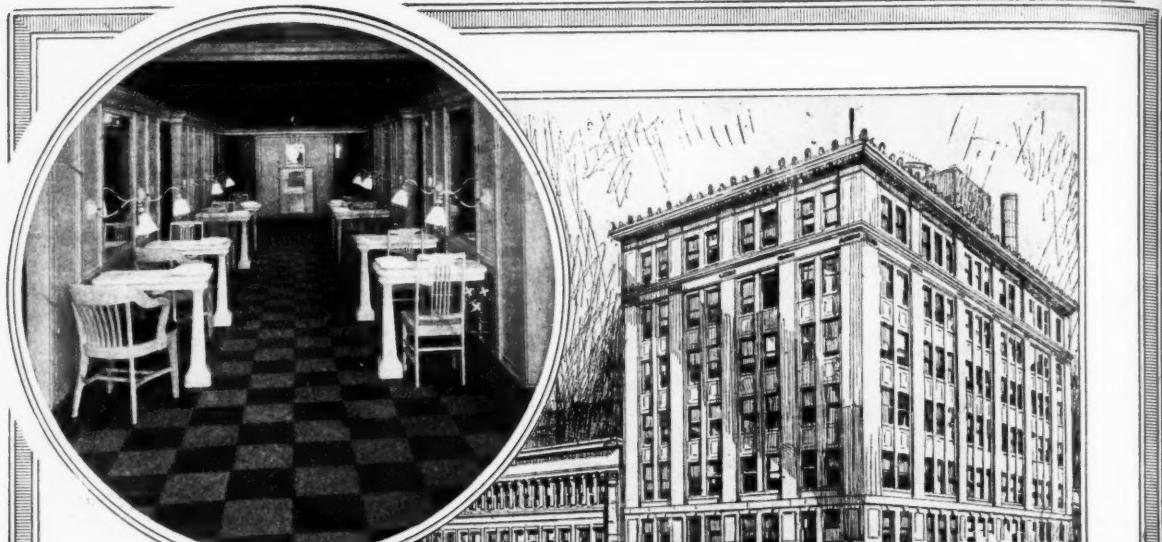
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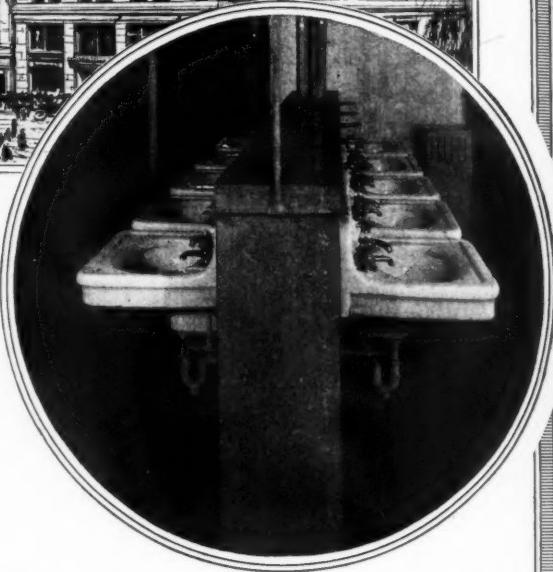


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